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THE JOURNAL OF THE FLORIDA MEDICAL ASSOCIATION

PUBLISHED MONTHLY

Volume XI

St. Augustine and Jacksonville, Florida, July, 1924

Number 1

ORIGINAL ARTICLES

SURGERY OF THE STOMACH.*

J. SHELTON HORSLEY, M. D.,
Richmond, Va.

The title "Surgery of the Stomach" is a much more pretentious one than I should have chosen for this address because it is impossible to cover even the essential features of all types of surgery of the stomach in a paper of the ordinary length. My chief purpose is to call attention to the recent work on surgery of the stomach, and particularly to emphasize the necessity of basing therapy of stomach diseases upon the modern physiologic views of gastric function.

Surgery of the stomach practically consists of operations for cancer or for ulcer, or for the effects of ulcer. Cancer not infrequently results from gastric ulcers, though the proportion has not been determined. Certainly it is not so high as some statistics from the Mayo Clinic formerly indicated, but that cancer may in all likelihood begin from the margin of a previously benign gastric ulcer seems most probable. This fact must be taken into consideration in estimating the advisability of surgical treatment of gastric ulcer.

While a course of knowledge of anatomy is essential for operations, successful surgical treatment demands a basis of physiological principles. Too frequently surgery of the stomach has been considered synonymous with gastro-enterostomy, and gastric lesions no matter where situated or what their size or condition received the same routine treatment of anastomosis between the stomach and the jejunum. The fact that many cases were relieved and some cured by such measures seems to justify a continuation of this method of treatment.

However, careful and conscientious following up of the end results of the increasing number of patients on whom a gastro-enterostomy had been done, many of whom later developed gastric symptoms, has cast a considerable damper over the routine use of gastro-enterostomy. Months or years after the performance of gastro-enter-

ostomy with an open pylorus symptoms not infrequently recur, and are usually traced either to the formation of jejunal ulcers or to a continuation of the pathologic processes in the original gastric or duodenal ulcer which was not excised at the time of operation.

The most satisfactory results in gastro-enterostomy have been in patients with complete or potential stenosis of the pylorus. As I have attempted to point out elsewhere, this is probably due to the fact that in such instances the gastric juice of the stomach does not gain exit through the pylorus, and so the alkalinity of the duodenal contents remains at its normal height, and for this reason can protect the mucosa of the jejunum from the acid of the gastric juice at the stoma of the gastro-enterostomy. If the pylorus were patent, the alkalinity of the duodenal contents would be lowered by the mixture of the acid gastric juice, and consequently there would not be sufficient alkalinity to neutralize quickly the acid of the gastric juice at the stoma of the gastro-enterostomy.

The work by Pawlow, Cannon, Carlson and their associates, together with observations by roentgenologists such as Cole, Case and others, have thrown a flood of light upon the function of the stomach, and particularly upon its peristalsis.

Our first duty in gastric surgery, as in surgery elsewhere, is to remove or to correct the pathology and as a close second we should attempt to restore tissues as nearly as possible to their physiologic function. Following rules of anatomy or making a neat line of sutures does not necessarily accomplish this latter indication. A beautiful anastomosis of the stomach to the jejunum may not result in the patient's death, but occasionally establishes an unphysiologic condition which makes the last state of the patient worse than the first. In order to restore conditions as nearly as possible to their physiologic normal it is necessary to consider briefly the recently established facts about the physiology of the stomach.

There are many things in the physiology of the stomach that have not been satisfactorily explained, but the main underlying principles have been determined. The nerve supply of the stom-

*An address on surgery delivered by invitation before the Fifty-first Annual Meeting of the Florida Medical Association, held at Orlando, May 13, 1924.

ach comes, as is well known, through the vagus and through the sympathetic system. The vagus is supposed to supply the motor impulses and the sympathetic the inhibitor. However, the stimulation of the vagus in a dog does not regularly in every instance produce motor impulses. It seems probable, as is claimed by some physiologists, that inhibitor fibers may form a small portion of the fibers of the vagus, and it is also thought that the sympathetic may also transmit to the muscles some of their motor fibers. The general muscular structure of the stomach with the three layers of rather stout muscles is well known. The action of these muscular layers is quite different in different portions of the stomach. When food is swallowed, waves of peristalsis begin about the middle of the body of the stomach and proceed toward the pylorus. The fundus of the stomach remains tense like an elastic hopper pushing the food toward the active pyloric end. The peristaltic waves tend to increase in force and terminate with a sharp, powerful contraction of the pylorus.

According to Cole, there seems to be a definite systole and diastole in the peristaltic waves of the stomach, each wave lasting about two seconds, and a systole, or period of contraction, taking about seven-tenths of the time, and the diastole, or period of relaxation, about three-tenths of the two seconds. It was formerly thought that the relaxation of the pyloric sphincter was due to chemical reaction,—that excessive acidity of the stomach caused relaxation of the pylorus with extrusion of the acid contents and the presence of acid contents in the duodenum caused reflexly a closure of the pylorus. This view was maintained for some time by Cannon, who has done such excellent work in physiology of the stomach. The theory, however, is not satisfactory in every respect, because it would not account for the contraction and relaxation of the pylorus in cases of an acidity nor can it explain the rapid exit of water for the stomach seems to expel water in a peculiarly rapid manner.

The more recent work by Luckhardt, Phillips and Carlson, and by Wheeldon and Thomas, seems to show that the action of the pyloric sphincter is a part of the peristaltic waves initiated in the body of the stomach, though as the tension is great and the muscles strong, the extent of the contraction may overlap some of the gastric peristaltic waves and cause a confusion in interpretation.

An admirable review on secretions of the stomach by Carlson (Carlson, A. J.: The Secretion of Gastric Juice. *Physiol. Rev.* 3:1-41, January, 1923) shows that many erroneous views on this subject have been entertained. For instance, Carlson states that there is no such thing as hyperacidity of the gastric juice, the normal gastric juice may contain 0.5 per cent of hydrochloric acid, and the pathologic variation is toward a decrease of acidity instead of an increase. Carlson also shows that there is constant secretion of gastric juice, even in an empty stomach. In the fasting stomach this secretion is at a minimum, and the percentage of hydrochloric acid and of pepsin is much less than in the gastric juice of an active digestion. According to Carlson we have been inclined too much to glorify the gastric juice. In three patients with complete cicatricial closure of the esophagus—a condition which I hope will occur less frequently in the future if the splendid work of your president, Dr. Taylor, is effective—Carlson has observed through the gastrostomy gastric juice in the empty stomach and in the various phases of digestion. These patients were entirely healthy with the exception of the esophageal lesion. He finds that though the "appetite" gastric juice is secreted rapidly, as Pawlow and others have shown, from physic influences, if this "appetite" gastric juice be withdrawn through the gastrostomy, and food introduced, there is but little or no disturbance of digestion. However, these conclusions probably vary somewhat for different individuals, and normal gastric juice doubtless has, while not an essential, at any rate an important function in the digestion of the average diet.

Carlson also points out that constant excessive secretion of gastric juice rarely occurs. The apparently excessive secretion is usually due to retention in the stomach either because of organic obstruction at the pylorus or because of spasm.

Different foods are acted upon quite differently in the stomach. Under normal conditions there is very little absorption of any kind from the stomach. The proteins are acted upon very promptly and markedly by the gastric juice, being changed into acid albumins, peptones, proteoses and other forms, but these products are but slightly absorbed from the stomach. Sugars may be absorbed, but only to a very limited extent, and when the concentration is high. Alcolol and many drugs are readily absorbed through the

stomach. The presence of proteins calls for an increase of gastric juice as well as for an increase of peristalsis; whereas carbohydrates, which are not acted upon by the stomach, do not bring forth an increase of gastric juice nor any unusual amount of peristalsis. They are quickly extruded into the duodenum, the stomach retaining the proteins a much longer time. These observations have a very important bearing upon the post-operative treatment of surgery of the stomach.

The exact etiology of ulcer of the stomach and duodenum has not been definitely determined, though much light has been thrown upon this subject by the work of Rosenow and of Mann, of the Mayo Clinic, and by Ivy, Dragstedt, and other physiologists in Chicago. Frank Smithies, in an admirable paper on gastric ulcers, analyzes a group of 522 proved chronic gastric ulcers (*Observations Upon the Nature, Diagnosis, and Clinical Management of Gastric Ulcer*, Amer. Jour. of Med. Sciences, December, 1923, No. 6, Vol. 166, p. 781). In this group 33.7 per cent were caused by infections, 14.7 per cent by arteriosclerosis, 13 per cent by visceral hypertonia (hyperfunction of vagus or splanchnic), 11.3 per cent by chronic general anemia, 7.8 per cent by syphilis, 5.2 per cent by visceral hypotonia (hypofunction of vagus or splanchnic), 5.2 per cent were post operative, 4.2 per cent by industrial intoxication (occupational poisonings), 3.4 per cent by metabolic dysfunction, and 1.5 per cent by trauma. This indicates that in surgery of the stomach for ulcer we must not only regard the local lesion but the general condition of the patient. As infection appears to play such a large role, foci of infection should be removed or corrected. This means not only that the teeth, tonsils and sinuses should be inspected and treated if diseased, but intra-abdominal foci such as the appendix and the gall-bladder should be considered, as well as the prostate in men and the cervix in women. The dictum that hyperchlorhydria means gastric or duodenal ulcer is fallacious. The hyperacidity of the gastric juice in the presence of ulcer or hyperchlorhydria is probably an effect rather than a cause. In some very interesting work by Dragstedt and Vaughn (Dragstedt, L. R., and Vaughn, Arkell M.: *Gastric Ulcer Studies*, Archives of Surg., Vol. 8, No. 3, May, 1924, p. 791), they indicate that experimental ulcer in the stomach of dogs tends to increase the secretion of gastric juice and as a rule to raise the acid concentration in animals in

which the acidity was low before the formation of the experimental ulcer. It seems reasonable to expect that the former slogan of hyperacidity meaning ulcer should be reversed, because we know that ulcer of the stomach may exist with low acidity or with anacidity. It is logical that an irritating lesion in the stomach would increase the secretion just as an irritant in the throat or eye increases the secretion there. The decrease of hydrochloric acid in the gastric juice accompanying cancer of the stomach is not specific for cancer of the stomach. It merely means that toxic products from gastric cancer, from cancer elsewhere in the body, from pernicious anemia, or from many other constitutional diseases, decrease the activity of the gastric glands.

Undoubtedly a large percentage of gastric ulcers are hematogenous in origin, and begin from small thrombi in the gastric mucosa causing local spots of necrosis which are digested. However, if there were not infection or some other condition to prevent healing, the ulcer should rapidly heal. There are probably many acute ulcers that do heal rapidly and give but slight clinical symptoms. The chronic type, however, persists and under ordinary conditions appears not to heal.

Acute ulcers have existed only for a short time, and particularly ulcers which have not received systematic treatment, should be treated medically, unless there are symptoms of perforation or hemorrhage. Persistent bleeding, even in small amounts, or massive hemorrhages, call for surgery.

In all ulcers of the stomach that are treated by surgical operation, it is not a question of using either surgical *or* medical measures, but of using both surgical *and* medical treatment, because medical treatment both before and after operation can assist greatly in the patient's convalescence. The common observation of the classical principles of rest laid down by Hilton, holds in lesions in every tissue and organ of the body, and in gastric surgery rest constitutes the main indication in the after-treatment. We know, for instance, that the proteins are acted upon very extensively by the stomach, and when proteins are ingested the stomach pours forth gastric juice and increases its motor function; consequently in the after-treatment, proteins should be eliminated as much as possible. We know that carbohydrates require very little activity upon the part of the stomach, so that the post-operative diet and the

pre-operative diet should be largely carbohydrates. The benefit of milk has been probably overestimated, though it is the blandest and least disagreeable of the proteins that can be administered.

Dr. W. H. Higgins, head of the medical department of St. Elizabeth's Hospital, in a very interesting analysis of 162 clinical histories of certain cases operated upon at St. Elizabeth's Hospital, found that hunger pains, or so-called "food relief," sometimes occurred after chronic appendicitis and after chronic cholecystitis, as well as after gastric or duodenal ulcer (*Clinical Significance of Hunger Pains*. J. A. M. A., Feb. 23, 1924; Vol. 82, pp. 599-601). His conclusion is that "the most probable cause of hunger pains is a duodenal reflex resulting either from the absorption of bacterial toxins through the branches of the vagi or from a local inflammatory process in the duodenum. The presence of adhesions in the extragastric lesions is undoubtedly a factor, but is not essential to the production of this symptom."

Pain is often relieved by an alkali, but the toxic effects of administering large doses of bicarbonate of soda are frequently harmful, and Smithies suggests that if alkali must be administered, not sodium bicarbonate, but calcined magnesia or milk of magnesia should be used. However, even magnesia should not be used routinely.

There is a tendency for the gastric juice to maintain a certain definite acidity, and if this acidity is much lowered by alkalies there is a call for further secretion of acid which, of course, increases the amount of gastric juice and the work of the glands of the stomach. Furthermore, the continued administration of alkalies, especially soda, irritates and increases the amount of secretion and mucus, and if extended, aside from the production of alkalosis, may cause an achylia.

It can readily be seen, then, that the proper indication for a pre-operative and post-operative treatment in gastric surgery is to give the stomach as little work as is consistent with the welfare of the patient. Time does not permit me to go into this in more detail, but the principles that have been mentioned are important.

Post-operatively, especially in resections of the stomach, peristalsis is often inhibited by the trauma. This may result in excessive accumulation of the gastric juice which cannot be emptied by the temporarily paralyzed stomach. With the stomach partially paralyzed and the gastric juice

accumulating the tension on the stitches is increased by the accumulation of the gastric secretion. Gastric lavage done under low pressure every four to six hours for a day or two until the stomach can empty is very helpful, and if the sutures have been properly placed there is no danger of breaking them. With an ulcer, however, which may have penetrated to the serous coat, the danger would, of course, be great.

After the discussion of the underlying principles, the technic requires less consideration. How should we treat the simplest form of chronic ulcer of the duodenum with no adhesions and without marked surrounding infiltration? To do a gastro-enterostomy in such a case and leave the lesion seems unphysiologic. We would be creating a situation which months or years later may cause a jejunal ulcer that is far worse than the original duodenal ulcer. The indications are, first of all, to extirpate the foci of infection, if infection exists elsewhere, in the teeth, tonsils, gall-bladder or appendix. The duodenal or gastric ulcer with its inhabitants of bacteria is massaged at frequent intervals by peristaltic waves forcing toxic products into the blood or lymph. Excision of the ulcer seems obviously indicated. It is difficult for a lesion to heal in the presence of almost constant muscular action. The persistence of fissure in ano while the action of the sphincter ani is intact is common knowledge. In order to heal the fissure in ano we either divulse or divide the sphincter ani. This has been one of the principles of surgery since the earliest days.

After excising the limited ulcer which occurs within the first inch of the duodenum, the next indication is to provide rest for tissue healing. This is done by division of the pyloric sphincter with division of the adjuvant sphincter, the pyloric canal, which is about 1½ inches in length. It is the hypertrophy of the muscle fibers in this pyloric canal which causes congenital pyloric stenosis in infants. These specifications are met by the pyloroplasty which I have been doing for several years. This consists of an incision of the pyloric end of the stomach from a point beginning about 2 inches from the sphincter. The stomach contents are evacuated with a suction apparatus, and the pyloric sphincter is divided. This exposes the ulcer, which is excised. The incision should not be carried further than an inch in the duodenum, or there will be too much tension on the tissues in the duodenum in the subsequent suturing. The incision in the stomach

should always be at least twice as long as in the duodenum. Most ulcers of the duodenum occur within this region. If, however, the ulcer is more than an inch from the duodenum, it can be excised and the wound sutured transversely without involving the stomach. This pyloroplasty is closed by suturing it in a transverse way as fully described in other communications, using tanned catgut and placing a tractor suture from the extremity of the wound in the duodenum to the extremity of the wound in the stomach, and another tractor suture just above this. The wound is closed with continuous sutures of tanned catgut in three layers; the first layer approximate the mucosa, the second the serous and muscular coats, and the third covers the teats at the two ends of the incision and buries the other two rows by a continuous mattress suture of fine, tanned catgut. Tags of gastro-colic omentum and gastro-hepatic omentum are brought down over the sutures and fastened, partly for additional protection to the sutures, partly to prevent adhesions to the fixed structures, and partly to make a gentle traction downward in the upright position so as to prevent the pylorus being drawn up too high under the liver.

This pyloroplasty in properly selected cases gives very satisfactory results. When it was first done in 1918, it was used in the great majority of duodenal and gastric ulcers. That it should not be performed in all of these cases became manifest, and it is employed now in certain ulcers of the duodenum, in small ulcers of the pylorus, or as an adjuvant to a V-shaped excision of ulcer in the body of the stomach in order to overcome the natural resistance afforded by the sphincter and the pyloric portion of the stomach in emptying the gastric contents. In this way the work of a crippled stomach is lightened and at the same time the sphincter is not destroyed, but merely enlarged and the probability of spasm is greatly lessened. When, however, a duodenal ulcer is extensive and there is marked leukocytic infiltration, or when adhesions are widespread, and are not confined solely to the gall-bladder, a pyloroplasty of this nature does not give good results. When the adhesions are solely to the gall-bladder and the gall-bladder can be removed without drainage, so that resulting adhesions will be minimal, the pyloroplasty may be done and will usually prove satisfactory.

Up to the present I have done sixty-one pyloroplasties. All of the deaths occurred in the first

twelve cases. There has been no mortality since the twelfth case. In a paper of last year (*The Choice of Operations for Gastric and Duodenal Ulcers*, J. A. M. A., Sept. 15, 1923, Vol. 81, pp. 912-918) 56 cases of pyloroplasty done to that time were carefully followed up and the results reported. Of these 56 cases two were untraced and 32 were complaint-free, 14 improved, and 5 unimproved. Of the five unimproved, a subsequent gastro-enterostomy with closure of the pylorus in four, and a pylorectomy in one, seemed to give entire relief.

At present, the ratio of pyloroplasties to other operations upon the stomach has naturally fallen. This is chiefly due to the fact that for a recurrence of trouble which occasionally comes after pyloroplasty, a pylorectomy or a gastro-enterostomy is done. Increasing experience has shown more clearly the limitations of pyloroplasty and that the particular operation best suited for each case should be chosen. In ulcers on the gastric side of the pylorus, a pylorectomy, which permits a wider excision of the involved tissue than a pyloroplasty does, seems a better operation. When there is an extensive duodenal ulcer and marked adhesions or stenosis, a gastro-enterostomy gives excellent results. In recurrence of symptoms from adhesions after a pyloroplasty, a stout kangaroo tendon is tied around the pyloric end of the stomach and a posterior gastro-enterostomy, preferably without clamps, is done. This procedure has given very satisfactory results. While closure of the pylorus in a normal healthy stomach may be difficult, a stout kangaroo tendon in the presence of pathology at the end of the stomach produces a long, and sometimes apparently a permanent, closure.

If there is doubt as to whether to do a pyloroplasty or a gastro-enterostomy, it would be better, other things being equal, to choose a pyloroplasty, because if the symptoms recur it is easier to close the pylorus and do a gastro-enterostomy than it would be to uncouple the gastro-enterostomy and then perform a pylorectomy or a pyloroplasty.

"Sleeve" resection of the stomach is sometimes indicated. An ulcer of the stomach more than two centimeters in diameter may be considered potentially cancer, and it is better to do a "sleeve" resection in such a case, uniting the margins of the stomach with a continuous lockstitch of tanned catgut and placing an additional layer on the serous surfaces. When it is necessary to excise a

large "V", the peristalsis in the upper border of the stomach is interrupted, but not the lower, and so unharmonious peristalsis results. A sleeve resection, however, puts the same handicap on all the peristaltic waves. A small sleeve resection may be done for a small gastric ulcer, but this operation should be accompanied by a pyloroplasty.

In suturing the stomach, it is best to place at least two rows of sutures. When the internal row of sutures is carried around anteriorly as in gastro-enterostomy or in sleeve resection, frequently the custom is to invert the margins of the wound with the idea of securing a neater appearance and a broad serous approximation. In such technics hemorrhage is not infrequent, because the mattress suture which inverts the margin does not produce satisfactory hemostasis,—whereas a continuous lockstitch that whips over the margins of the wound is a hemostatic suture. This internal row can be readily buried by the external sutures, and does not present as much raw surface to the interior of the stomach as would be presented if the raw margins were turned in. The cut edge of the stomach faces toward the serous coat, and on burying this margin a large amount of lymph is thrown out because of irritation of the raw surface and closure by plastic lymph is quickly and securely accomplished.

In excision of the pyloric portion of the stomach, if cancer is present a more extensive operation should be done. The Polya method of the Balfour modification of the Polya, in which the jejunum is brought over the colon, is well known and is in many instances an excellent operation. The Billroth I operation, in which the stump of the stomach is united to the stump of the duodenum, is again coming into vogue and has great merit. The axis of the gastric peristaltic waves is along the lesser curvature to which the greater curvature approximates. This renders it important, in the Billroth I type of operation, to place the opening of the duodenum along the line of the lesser curvature of the stomach, and not on the greater curvature of the stomach as was formerly done by Billroth. In the sleeve resec-

tion adjustment along the lesser curvature should also be accurate.

The danger of obstruction that may occur from suturing the thick wall of the stomach to the thin wall of the duodenum is partly obviated by making an incision of about an inch into the anterior wall of the duodenum, which flares it open and gives a larger surface for suturing.

Recently Finney, of Baltimore, who has done such excellent surgery on the stomach, and Haberer, of Innsbruck, have independently devised an operation of pylorectomy in which the duodenum is laterally mobilized from its origin to the transverse colon, as in the Finney operation for pyloroplasty. The pyloric end of the stomach is excised in the usual way, and the stump of the duodenum is closed with two pursestring sutures. An incision is made in the antero-internal surface of the duodenum, a little more than two inches long, and the stump of the stomach is sutured into this incision in the duodenum as an end-to-side operation. This empties the stomach into the duodenum, which is the physiologic receptacle for its contents, and at the same time there is provided from the common bile duct an ample supply of alkaline material opposite the wound. The chief objection to this operation is that it may to some extent interfere with emptying of the pyloric portion of the stomach, because the peristalsis in the duodenum is largely destroyed by dividing the circular fibers and the fastening of the pyloric portion of the stomach to the duodenum, which is fixed above and below, may prevent a full contraction. For this reason there may be some delayed emptying of the stomach for the first few days after the operation, but after this time the stomach will doubtless adapt itself to the new conditions and the late results should be better than the Polya method or the Billroth II.

These are merely outlines of the recent trends of gastric surgery based upon the modern work in physiology of the stomach. The last word, of course, has not been said, but the improvements are marked when we consider the results generally obtained fifteen years ago when gastro-enterostomy was popularly almost the sole procedure in gastric surgery.

EVENTRATION AND HERNIA OF THE DIAPHRAGM, WITH REPORT OF THREE CASES.*

L. W. CUNNINGHAM, M. D.,
AND
W. McL. SHAW, M. D.

Since 1921, Dr. Shaw and I have encountered three cases in which the stomach and more or less of the small and large intestine occupied a considerable part of the left thorax. Rarity is indicated as these are the only cases I have seen since beginning X-ray work in 1909. We are indebted to Dr. H. Herman Harris, Dr. Louie Limbaugh and Dr. Harold Van Schaick for their interest in these cases they referred and for their collaboration in their study. None of these cases have been operated or posted and although we believe one to be dead, we are inclined to feel that two of them are hernia of the diaphragm and one is an eventration. The subject of eventration and hernias are very closely linked and somewhat inseparable, and we will take up the early work done in this field that you may see its difficulties and points of interest as well as their diagnostic features. Left-sided pneumothorax, and right-sided as well probably to less extent, dextrocardia, and any elevation of the diaphragm should lead one to suspect one of the above conditions.

1. DEFINITION.

The term, "Eventration," is usually accredited to Petit, indicating a condition of chronic idiopathic unilateral elevation of the diaphragm, which he described in 1790. This common view is, however, disputed by Korns,⁶ who states that Petit does not in any part of his writings employ the term "Eventration," but describes his case as a peculiar variety of diaphragmatic hernia, and goes on to assert that it was not until the time of Cruvelhier—some thirty years later—that the essential difference between hernia and eventration was elucidated. The credit for the introduction of the term *eventration* has been variously distributed, according to Korns. "Part of this confusion is, no doubt, due to the fact that Cruvelhier directly contradicted himself in this connection. In the *Anatomic pathologique du corps humaine* (1829), he states unequivocally that

Petit's case has been shown by Beclard to belong more properly in the class of eventrations. Twenty years later, in his *Traite d'Anatomic pathologique générale*, he says it was Petit who gave the name, "Eventration." In as much as no reference to the term is found in Petit's original article, one is inclined to accept Cruvelhier's original statement, crediting Beclard with being the first to make use of the term in critical differentiation of the condition from hernia of the diaphragm."

Stanhope Bayne-Jones¹ remarks that among the lesions of the diaphragm, none has passed into literature under more synonyms than that most commonly called eventration. He credits Cruvelhier with having been the first to introduce it in 1849, going on to say that the names "dilatation," "relaxation" (Wieting), "insufficiency" (Franck), "high position," "elevation" (Giffin), have been used to designate a pathological state of the diaphragm, characterized by a general expansion of one half of the organ, allowing the abdominal viscera to be displaced upwards into the thoracic cavity. The diaphragm is greatly thinned as well as distended, but its three layers remain intact, and there is no solution of continuity. In this essential respect, the condition is different from hernia of the diaphragm, which, whether true or false, depending on the presence or absence of a hernial sac, consists of a localized opening in the sheet of the diaphragm, through which the abdominal viscera pass into the thoracic cavity. "All of the terms mentioned are partially descriptive, though none is satisfactory. While the commonest of them, eventration, is a gross misnomer, since it suggests the displacements of the viscera out of the abdomen, it has received by custom a connotation which is specific for this condition of the diaphragm. The other terms are so ambiguous that if any one of them were accepted, it would yet require long usage to gain special meaning needed in this connection."

According to Korns⁶ though the term is "obviously inexact," none those offered in its stead are any improvement, and by their multiplicity have only served to add confusion in terminology. He gives the following definition: "So-called "eventration" of the diaphragm is understood to mean a high position of one half of the phrenic leaf, conditioned, not simply on displacement, but on aplasia (congenital) or atrophy (acquired) of the muscle fibers of that half of the diaphragm."

*Read before the Fifty-first Annual Meeting of the Florida Medical Association, held at Orlando, May 13, 14, 1924.

"Insufficiency" of the diaphragm is the term preferred by Lerche⁷ who would group under this general name the various etiologic conditions other designations have been brought forward to describe. He would subdivide it, first, into congenital and acquired, and the acquired form, again, into acute and chronic.

Perhaps the best definition we have encountered is that given by Manges and Wessler⁹, who, deftly avoiding all historical and etymological pitfalls, state simply that eventration is a comparatively rare condition in which the diaphragm, owing to extreme atrophy, succumbs to the pressure of the stomach and intestines beneath it, together with them, is displaced into the thoracic cavity.²

2. HISTORICAL REVIEW.

No matter whether or not Petit originated the term eventration, there is no doubt that his report is the first recorded instance of the condition usually so designated. The patient had long suffered from a so-called asthma, but Petit recognized during life that this was due only to the presence of the "hernia." When the patient died of peritonitis, autopsy revealed that the supposed hernial sac was "nothing but a prolongation of the peritoneum, the diaphragm and the pleura, together, without the slightest rupture of the membranes, or any opening in the muscular or tendinous fibers of the diaphragm." Korns has very carefully reviewed all available literature upon the subject, and spent much time in clearing up many historical inaccuracies. Passing over these, it would seem that the first note of any thorough clinical examination is in the report of March (1867), and other undoubted cases of true eventration were reported by Thoma (1882) and Tennant (1894). "The case of Struppner, described in 1901, is of some interest. Struppner himself, with the aid of the roentgen ray, made a diagnosis of hernia of the diaphragm. His arguments in favor of this diagnosis, however, are far from convincing, and his published skiagrams appear to show clearly an abnormally high, but intact left diaphragm. One of them depicts a stomach tube, filled with mercury, lying in the stomach beneath the diaphragm. This case was the first ever studied by the roentgen ray, and it became so immediately apparent that this procedure could not be regarded as absolutely reliable in differentiating between hernia and eventration, that "it precipitated a polemic which has raged unabated ever since."

Most of the articles on eventration of the diaphragm make mention of the celebrated case of Friedrich Schneider, often designated simply as "Sch." Mention is first made of him, according to Neuman, in 1890, when he was first described by Stinzing as an example of congenital dextrocardia. From that time until his death in 1912, he went about presenting his diagnostic problem to one clinic after another. He was roentgenographed so diligently that he acquired a burn. Hirsch, in 1900, making a diagnosis of diaphragmatic hernia on the basis of the roentgenologic findings. Hirsch's findings strongly suggest eventration, but he never mentions it, even as a possibility. As a case of dextrocardia, this patient was made the subject of Becker's inaugural dissertation in 1904, at Jena, but the next year Hildebrand and Hess⁴ studied Schneider very carefully, using Schlippe's procedure of measuring the respiratory variations in the intragastric pressure, and thus satisfied themselves of the correctness of their diagnosis of eventration of the diaphragm.

Wieting's case (1906) is the first reported example of *right-sided* eventration, a diaphragmatic hernia being also associated with it. Hamdi first described this patient's condition as a hernia only, but Wieting went back over the gross pathology and demonstrated that an eventration existed, for the entire right phrenic leaf was found to be a "fascia-like structure without muscle fibers", the left diaphragm, however, being normal. Since this case was put on record three other right-sided eventrations have been published, the last being that of Bayne-Jones in 1916.¹ In connection with this case report, this author gave a list of 44 other eventrations which he had gathered from the literature. Korns, writing five years later, after a careful study of the literature classed 18 left-sided and 4 right-sided cases as proved beyond any question as genuine eventration; and 41 left-sided and 2 right-sided cases as not proved but reasonably certain, making a total of 65 cases which one is justified in classifying under this head.

3. DIFFERENTIAL DIAGNOSIS.

According to Giffin³ the most important and difficult differentiation to make is that between diaphragmatic hernia and what he termed *elevation* of the diaphragm. Elevation or, as termed before, eventration of the diaphragm is not an operative condition, while diaphragmatic hernia is generally surgical. "The importance of decid-

ing between the two conditions is therefore increased. Cases of elevation have been diagnosed hernia and unnecessarily operated upon." Giffin considers that the diagnosis can best be discussed in a consideration of (1) the clinical symptoms, (2) the physical signs, and (3) the radiographic and fluoroscopic findings. A history of severe recent trauma should suggest the existence of a rupture of the diaphragm. Chronic cases of hernia, either congenital or traumatic, give a less striking symptomatology and a history of much less severe injury, thus approaching the symptoms of elevation of the diaphragm, where abdominal pain, dyspnea and vomiting, though less severe, may recur in attacks, and these may be worse after trauma without rupture being present. Elevation is generally a congenital condition. A prominent symptomatology may only follow trauma. Dyspnea, pain, indefinite gastric complaints may be of varying grades, hematemesis has been reported.

It is in these chronic cases, then, that the physical findings and the radiographic and fluoroscopic study are most important.

Tympanitic percussion note, distant breath sounds, gurgling and tinkling sounds over the left lower chest, with a hyper-resonant note and normal or slightly altered sounds over the left upper chest are common to both conditions. The heart is displaced to the right. In diaphragmatic hernia Litten's sign may be absent, and it has been suggested that the line of tympany may be less movable than in elevation.

In radiograms of either condition the most noticeable abnormality is the existence of a curved shadow line with the concavity downward in the left chest, and the problem is to determine whether the shadow line represents stomach wall, as in hernia; a high diaphragm, as in elevation; or eventration or both stomach wall and diaphragm, as in elevation. (1) The shadow of hernia may vary in outline, may be irregular or incomplete. The shadow of elevation is generally maintained as a typical dome-shape whether it be low or high, or whether the radiograph be taken before or after the distention of the stomach with CO₂. (2) In diaphragmatic hernia the mottled appearance of the lung tissue is visible through the gas contained in the stomach. This is not noted in elevation of the diaphragm, even after extreme distention. These two observations are, in Giffin's opinion, the most important in the radiologic diagnosis. Lerche,

however, writing ten years later than Giffin, reports a case where this second sign failed altogether, and adds "that it can readily be seen how this added to the difficulty in making the differential diagnosis in this case, and it means that the value of this sign must be taken with a grain of salt.⁷

In diaphragmatic hernia, according to Rowlands,¹⁰ by far the most important aids to diagnoses are the roentgen-ray appearances. An opaque meal may definitely show the stomach to be above the diaphragm. Above the barium in the stomach the usual gas-bubble is easily recognized, bounded by a definite curved line, indicating the wall of the stomach. This must not be mistaken for the usual bow-line of the diaphragm, which is much lower and less acutely curved. In these cases the outline of the diaphragm is rather indefinite and irregular on the left side, and it does not move well on respiration; the left cupola may move up while the right moves down during inspiration. On careful observation lung tissue may be seen through the air-bubble above the opaque meal. This is most valuable in distinguishing diaphragmatic hernia from eventration and all varieties of pneumothorax. The administration of a Seidlitz powder by mouth may help this examination by distending the stomach with gas. An opaque esophageal tube may be seen to pass up again through the diaphragm into the part of the stomach in the hernia. After a barium enema the splenic flexure of the colon may be shown above the diaphragm, and in some cases it has been seen to reach as high as the clavicle. This is conclusive evidence of diaphragmatic hernia.³

Comments on the diagnosis of eventration of the diaphragm usually relate to left-sided conditions⁸, so that the remarks of Bayne-Jones on his right-sided case are of especial interest. "In the absence of signs of fluid, thickened pleura over the lower part of the right chest was thought at first to be the cause of the dullness on percussion, the diminution of breath and voice sounds, the absence of fremitus and Litten's sign in the right axilla. However, the exact location of the flatness and of the complete loss of vocal sounds over the region from the third to the fifth ribs, lying between normal lung resonance above and a curious area of tympany below, made it seem more likely that this region was occupied by liver. Inflation of the colon displaced this area of dullness upward and increased the tympanitic region

below, as would occur with a semi-movable organ like the liver lying in a relaxed and elevated dome of the diaphragm, but which could not occur in thickened pleura. The most closely allied condition which would give some of these signs is hernia of the right side of the diaphragm. Of this lesion, for comparison they had but one case—perhaps the only case diagnosed during the life of the patient—that reported by Dietlen and Kneirin. In their case the stomach and some coils of intestines passing through the diaphragm into the thoracic cavity, lay above the liver. Here the area of tympany across the chest lay between normal lung resonance and the area of hepatic dullness.

"Changes in the position of the patient, and the ingestion of fluids and gases somewhat modified the sounds elicited by percussion and auscultation over the tympanic area, giving almost the reverse order of the two lower strata of physical signs noted in our case of eventration of the diaphragm."

In Bayne-Jones's case the radiographic and fluoroscopic examinations confirmed the clinical impression of eventration of the diaphragm. The left side appeared to be normal, while the right showed a smooth shadow arching upwards across the thorax to the level of the third rib. Above this shadow normal pulmonary shadows were visible, while below it the stomach and the intestines, when filled with bismuth, could be plainly seen. This contrasts sharply with the roentgenograms in hernia of the right side of the diaphragm. In Dietlen and Kneirin's case, a bright area was seen between the lung shadows and the black hepatic region. When bismuth paste was administered, the peristaltic shadows of the stomach and small intestine obliterated the bright area. The movement of the diaphragm in these two cases is so contradictory that it indicates the doubtful value of this sign in the differentiation of eventration of diaphragm from hernia of either the right or left side. In 1898 Kienbock observed paradoxical movements of the diaphragm by the fluoroscopic screen. This form of motion is characterized by inspiratory elevation and expiratory descent of the affected side of the diaphragm. Though it is found in numerous conditions such as pleurisy with effusion, and pyopneumothorax, it was observed in a case of hernia of the left side of the diaphragm, and was seized on as one of the definite radioscopic signs of this condition. In Bayne-Jones's case of even-

tration, the movement of the thin distended side of the diaphragm was paradoxical in character, while in a case of hernia, the movement of the upper borders of the diaphragmatic shadows was normal, descending with inspiration and rising with expiration. Before this, however, Lotze's case¹³ had proved that the differential diagnosis between hernia and eventration cannot be made with absolute certainty by means of the roentgen ray. He described what seemed to be a typical example of eventration on the left side of the diaphragm, in which the respiratory excursions of the diaphragm were normal, though diminished. Several years later, when Risel performed the autopsy on this patient, he found an old hernia of the left side of the diaphragm, with the rest of the organs practically normal.

Many cases of eventration have been explored with the aspiring needle under the supposition of pneumothorax. While the signs here may be similar, the history and the general condition of the patient with eventration are different from those features in other diseases⁸. In eventration there is not likely to be the sudden onset, great dyspnoea, and fever, which characterize pyopneumothorax. In subphrenic gas abscess, such as occurs with a walled-off perforation of an ulcer of the stomach, Litten's sign may still be visible in the axilla, while the general condition indicates an acute septic state rarely present in eventration.

The differential roentgenologic findings have been summed up by Becker as follows: In both hernia and eventration a delicate bow-shaped line may be seen arching upward across the left side of the chest. In hernia, the contour of this line is irregular, partly distinct, partly blurred; it usually shows a paradoxical respiratory movement; when the stomach and intestines are filled with bismuth, extreme derangement of the line is caused by the new shadows, and when the stomach is inflated with CO₂, the line shows practically unlimited extension upward, along with obvious displacement of the stomach, and the lung shadows can be seen through the bright area of the inflated stomach. In *eventration*, the contour of the line is that of a sharply defined smooth, bow-shaped shadow, with a bright area below and lung shadows above; the movement is usually normal but diminished; when the stomach and intestines are filled with bismuth, the new shadows take a restricted dome-like position, and when the stomach is inflated there is only a smooth distention, limited by the bow-shaped

line, while the lung shadows remain entirely above this line and are not visible through the "stomach bubble."

A number of these two conditions have been reported in children and newborn infants and it suggests that we be suspicious of those children who show dyspnoea, cyanosis, pain and dextrocardia.

A number of traumatic cases have been reported since the Great War and in some instances the men have been entirely well of the primary injury, the hernia occurring some months later. One author states that any wound of the diaphragm is a potential hernia as it will not heal except to leave a weak spot and should be repaired. A masterly treatment of this subject by Morison¹² is of great value and interest. His reference to unilateral phrenic paralysis and the differential diagnosis notes a condition that we will have to differentiate from those in this paper.

CASE REPORTS.

CASE 1.—Mr. H. M. K., white, age 25 years. (Slides No. 63, A-F, inclusive.) Patient gave a meager history. Served in Army in France. Was gassed, and at another time had pneumonia while in the service. Was also in a motor-car accident while in Army and states was unconscious for three days. Complained of pain and distress below the left costal border. No pain after eating. No nausea or vomiting. Patient examined February 4, 1921, and although we have been unable to trace him we are sure from what information was secured he is alive. We were requested to make an examination of the chest and on screening the patient saw a large, gas-filled area in the left side. This gas would change position with the movements of breathing and the effect was like that of moving clouds of smoke. We immediately suspected the condition to be narrated. The barium meal passed up into the left thorax and in the oblique view was seen to be inverted and practically the entire stomach is in the left chest. You will note from the slide the pylorus points downwards. The stomach, of course, emptied rapidly. Gas patches were noted to the outer side of the stomach and it was found that the splenic flexure reached high into the left chest. At the end of 24 hours all the barium remaining is noted in the rectum. We feel that the findings as well as the history indicate this to be a hernia of the diaphragm. Pneumoperitoneum might be done in these cases if one could

not be certain otherwise, but we consider this a diagnostic measure with considerable risk to life and are disinclined to use it.

Study in the lateral view and repeated studies of the patient will materially assist in deciding between eventration and hernia. Pneumoperitoneum would need to be done very cautiously and probably under fluoroscopic control, as in eventration you have a thinned-out diaphragm and in hernia an actual solution of continuity of the diaphragm already present. Comments on slides:

CASE 2.—Mr. J. D. S., white, age 41 years. Married. Farmer. (Slides No. 64, A-E, inclusive.) Studied on Service of Dr. Limbaugh, St. Luke's Hospital.

Chief Complaint: Pain in the chest and under the shoulder blades.

Family History: Father died, aged 56, in 1911, of typhoid fever. Mother, aged 67, living and well. Three brothers, aged 46, 38 and 35, respectively, are living and well. One brother died, aged 2, cause unknown. Three sisters, aged 43, 28 and 27, respectively, are living and well. First wife died, aged 19, of "child-birth fever." One child by first wife, age 17, living and well. Second wife, age 36, living and well. No children dead. Neither wife had any miscarriages.

Past History: Was a healthy child during first year of life. When thirteen months old he had a "sunstroke" which paralyzed him. He states that he was paralyzed all over and improved very slowly, being just able to crawl around when 26 months of age. He states in another year or so he was entirely well. When ten years of age he had "dropsy" in his feet and legs which condition persisted with severity for ten years. During this time he was more or less confined to a wheel-chair and was told by physicians that he had "heart dropsy." He states that during this illness his left leg bursted and ran water for several weeks after which there was a pus-like discharge from the sore for six years. After it became healed it has never bothered him since, and at 21 years of age he was able to work some. When 28 years of age he had a severe attack of typhoid fever which lasted six weeks. He states that he also had pneumonia at the same time and had a recurrence of both diseases when aged 36, which illness lasted three weeks. This illness left him with a painful sensation in his back under

the shoulder blades. He describes this as feeling like a "blubber" was in his back. States that the sensation was noticeable in the morning, but would disappear after being up and stirring about for an hour or more. This sensation persisted up until the present illness for five years.

Venereal History: Had gonorrhreal urethritis, uncomplicated, when 23 years of age. No other venereal infection.

Present Illness: Onset is dated from an auto accident which occurred on August 17, 1922. The car turned turtle and he was thrown out, but was not pinned under the car so far as he knows. He was knocked unconscious and upon regaining his senses, his only complaint was a feeling of numbness around his left shoulder. No evidence of injury was found on medical examination, but he was advised to keep hot applications to the left shoulder, which he did. He went home and retired and six hours later began to have a feeling of nausea which rapidly increased and on attempting to vomit he lost consciousness. He did not regain consciousness for thirty-six hours and was afterward told he had vomited once and then only a small amount of bloody material. He now complained of pain in his left chest along the costal border. He describes it as a binding, pinching pain. Also complained of soreness through the left chest and back. There was dyspnea and great distress after meals. He remained in bed three weeks. After getting up he learned he was more comfortable when in the upright position than when lying down and also that he suffered far less when he ate only liquid foods. There has been but slight improvement of these symptoms until the present time. On two occasions a thoracentesis has been done by doctors who were suspicious of fluid in the chest. He has been unable to work. Ten days ago he developed dengue fever from which he readily recovered.

Gastro-intestinal tract: Appetite good, but suffers with dyspnea and a full feeling in the chest and abdomen after eating. Has sensation of food lodging in the throat. No nausea or vomiting since immediately after the accident. Eruptions of gas present. Has a boring pain in the epigastrium after eating solid food.

No cardio-vascular symptoms. Has no cough or expectoration. Dyspnea only after eating or exertion. No hemoptysis. Genito-urinary system negative. Sleeps well.

Habits: Drinks coffee and tea three times daily but not to excess. Moderate smoker. Does

not drink alcoholic beverages. Is not a drug addict.

Weight: Maximum, 148 pounds, and was weighing this much at the time of the accident. Usual weight, 135 pounds. Present weight, 105 pounds. This loss is explained by the fact that the patient has been on an essentially liquid diet for the past nine weeks.

October 16, 1922, he was referred to the X-ray Department of St. Luke's Hospital for study of the chest. The outstanding evidence was that of a large collection of gas in the left thorax. The diaphragm could not be seen with the fluoroscope. Marked lateral curvature of the spine in the dorsal area noted. The study of the stereoscopic films showed shadows which he felt were patches of gas in the colon, also in the left thorax. A barium meal and enema study was suggested and the former was done. The barium was noted to lag in the esophagus but passed out of the esophagus upward and to the left into the stomach and when erect the barium showed a considerable gas bubble above it. Heart was moderately pushed toward the right. Stomach emptied slowly and still showed some barium at 9 p. m., and at this time the splenic flexure of the colon was seen to lie to the outer side of the stomach and is also in the left chest. Patient left the hospital and we were not allowed to further study in this case. This man died in 1923, and the cause of death was given as "strangulated bowel" with an auto accident contributing. We were unable to secure any more definite data but feel that this is a hernia of the diaphragm due to trauma.

CASE 3.—Mr. J. MacG., white, age 30 years. Salesman. (Slides No. 62, A-G. inclusive.) Referred by Dr. Harold Van Schaick. Had symptoms referable to the heart and chest and is neurotic, having been told that his heart was displaced to the right side. Recently his stomach has bothered him. Barium-meal study March 13, 1923.

Screen study of the chest showed the heart displaced to the right probably two inches more than normal, the right diaphragm being normally movable. The left diaphragm was not clearly seen, the lower half of the left chest being irregularly dense. The stomach filled in normal fashion and was long and low in the abdomen and showed a fairly large residue at the end of six hours. Stomach and duodenum normal with the duodenum leading directly upward into the

left thorax. The small and large bowel practically fill the lower left chest. Appendix not visualized but apparently in the left thorax. Patient interrupted the examination at this point and could not be traced on a recent attempt. This appears to us to be an eventration of the diaphragm, and very likely a congenital condition considering the position of the small bowel and colon in the chest.

In conclusion we would again note that these conditions may have mild symptoms and be most disconcerting on physical study of the chest. They may occur at any age and are very commonly confused with some other condition. Since deciding to report these cases we can see from the study of the literature where we could have studied them more thoroughly as it is indeed difficult to decide between the two conditions.

REFERENCES.

¹Bayne-Jones, Stanhope.—Eventration of the Diaphragm. Arch. Int. Med. 17:221, February, 1916.

²Funk, E. H., and Manges, W. F.—Eventration of

the Diaphragm with Report of a Case. Med. Rec. 86:134, 1914.

³Giffin, H. Z.—The Diagnosis of Diaphragmatic Hernia. Ann. Surg. 55:388, 1912.

⁴Hildebrand, H., and Hess, O.—Zur Differential Diagnosis Zwischen Hernia Diaphragmatica und Eventration Diaphragmatica. München Med. Woch. 52:745, 1905.

⁵Hurst, A. F.—Note on "Eventration of the Diaphragm." Guy's Hosp. Repts. 71:102, 1921.

⁶Korns, H. M.—The Diagnosis of Eventration of the Diaphragm. Arch. Int. Med. 28:192, 1921.

⁷Lerche, William.—Insufficiency (Eventration) of the Diaphragm. Surg. Gyn. Obs. 34:224, 1922.

⁸Louste, A., and Fatou, E.—Un cas d'Eventration Diaphragmatique Bull. et Mem. Soc. d'hop de Paris, 46:98, January 20, 1922.

⁹Manges, Morris, and Wessler, Harry.—Eventration of the Diaphragm. N. Y. Med. Jour. Oct. 24, 1914.

¹⁰Rowlands, R. O.—Diaphragmatic Hernia. Guy's Hosp. Repts. 71:301, 1921.

¹¹Samaija, Nino.—Eventratio Diaphragmatica L. Capelli, Ed. Bologna-Trieste, 1920.

¹²Morison, J. M. W.—Elevation of the Diaphragm. Unilateral Phrenic Paralysis. A Radiological Study with Especial Reference to Differential Diagnosis. Arch. Rad. and Elect. 274:353, May, 1923; 277:72, August, 1923; 278:111, September 11, 1923.

¹³Lotze, K.—Cited by Bayne-Jones. Deutsch. Med. Woch., 32:1622, 1906.





63C. MR.H.M.K.
ANTERIOR-POSTERIOR PLATE OF CHEST
SHOWING THE STOMACH INVERTED
IN LOWER LEFT CHEST



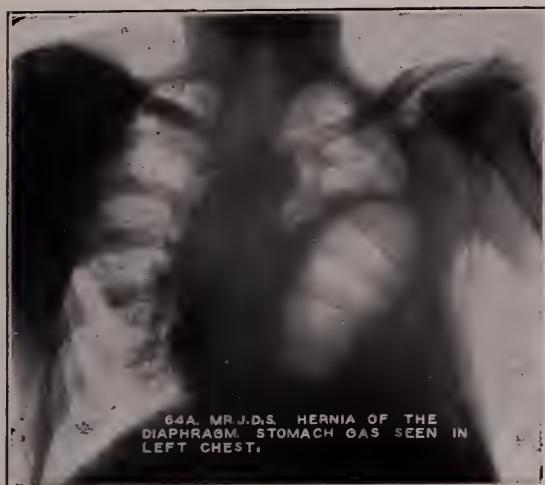
63F. MR.H.M.K.
SHOWING ONLY BARIUM PRESENT ATEND IN THE RECTUM.



63D. MR.H.M.K.
COLON, BARIUM FILLED IN LOWER LEFT CHEST



63E. MR.H.M.K.
BARIUM ENEMA SHOWING FILLING OF THE
SPLENIC FLEXURE INTO THE LEFT CHEST
& STOMACH FILLED WITH GAS ABOVE



64A. MR.J.D.S. HERNIA OF THE
DIAPHRAGM. STOMACH GAS SEEN IN
LEFT CHEST.



64B. MR.J.D.S. BARIUM FILLED
STOMACH IN LEFT CHEST.



64D. MR. J.D.S.
BARIUM FILLED
LEFT CHEST.



64C. MR. J.D.S. BARIUM FILLED STOMACH
IN LEFT CHEST. SMALL & LARGE BOWEL
IN NORMAL POSITION.



64E MR. J.D.S.
STOMACH GAS IN LEFT CHEST.
BARIUM FILLED SPLENIC FLEXURE
IN LOWER LEFT CHEST.



62B. MR. J. MAC G. LOW ATOMIC STOMACH.



62A. MR. J. MAC G. EVENTRATION OF THE DIAPHRAGM. HEART DISPLACED TO RIGHT.
BARIUM AND GAS PATCHES IN LEFT CHEST REGION.



62F. MR. J. MAC G.
LOWER LEFT CHEST FILLED WITH
BARIUM MEAL.



62C MR. J. MAC G. SMALL INTESTINE
FILLING IN LEFT CHEST.



62E MR. J. MAC G.
SMALL & LARGE BOWEL FILLED IN
LOWER LEFT CHEST AREA.



62D MR. J. MAC G.
DUODENUM STRETCHED OUTWARDS &
UPWARDS INTO LEFT CHEST.



62G MR. J. MAC G.
OBlique view CHEST.
COLON BARIUM FILLED.

DISCUSSION.

Dr. J. C. Dickinson, Tampa:

I think that Doctor Cunningham has presented a very interesting series of cases. His paper is very complete, and presents fully the X-ray findings in connection with eventration and diaphragmatic hernia.

One of the most important and valuable things, I think, Doctor Cunningham has done is his complete bibliography on the literature of this subject, which makes it very valuable.

One of the striking points in these cases is the comparatively meager clinical symptoms that these patients present. They are usually discovered by accident, in cases of examination for some entirely different purpose. A number of them have gone through life with perfect comfort, entirely unaware that they were not perfectly normal individuals.

Doctor LeWald, whom Doctor Cunningham referred to, recently reported the case of a man thirty-five or thirty-six years old, who had been an athlete all of his life—a long-distance runner and swimmer—in which he found the stomach in the abdomen; the coils of the small intestines and colon were in the thoracic cavity.

Doctor Cunningham mentioned the possibility or probability of this condition existing in children and its not being recognized, the child dying from some other condition undiagnosed. I would like to show some slides that we have on a case which is at the present time in the hospital. This child was referred for examination with a diagnosis of "dextro-cardia". A chest film was made and showed this condition. The characteristic findings in the left chest we believed to be explained by the presence of the gas-filled intestinal coils, and on the strength of this we asked for a barium meal and subsequent slide showed findings (slides exhibited by Doctor Dickinson).

1. Showed stomach in abdomen.
2. Showed small intestinal coils running near to apex of lung. What was believed to be the duodenal cap was practically inverted with a streak of barium running up into the chest.
3. (Taken 6 hours later). Showed cecum, transverse, ascending and descending colon up in chest.

We believe that this is a case of practically congenital absence of the left diaphragm. The patient has not a dextro-cardia—the heart being

displaced far to the right. There is no question as to where this youngster would have appendicitis, it would be well up in the thorax.

This child was two weeks old at the time diagnosis was made, and at that time was the youngest case on record. Within one week, a periodical reported a case at two weeks, and absolutely ruined our case.

Dr. H. H. Harris, Jacksonville:

I have had the pleasure of seeing two of these cases that Doctor Cunningham presents to you. One was on Doctor Limbaugh's Service at St. Luke's Hospital and the other was a veteran referred by the United States Veterans' Bureau. These are certainly very interesting cases, and it is very difficult, I find, to make a diagnosis without the X-ray findings in the case.

One of these young men, the one from the Veterans' Bureau, was referred with a diagnosis of suspected pulmonary tuberculosis,—and had quite a few symptoms. He gave a history of cough over a long period of time and complained of a great deal of dyspnea and indigestion. At the examination I was very much baffled,—the whole of the left chest was tympanitic and I was inclined to believe he had a pneumothorax. That was in the morning. I sent him out and asked him to return in the afternoon. At this examination, instead of the chest being tympanitic, it was perfectly flat and I thought we might have an effusion. He had had a meal, filling up the stomach, and the physical signs had entirely changed. I examined him several times and each time the physical findings depended entirely on whether he had had an empty or a full stomach. Doctor Cunningham, at X-ray, of course, noted the greater portion of the abdominal viscera up in the left pleural cavity. He was working every day, holding down a position in a hardware store, and outside of occasional cramps after meals and cough, he looked like a healthy individual. The last time we heard from him he was getting along well. No surgeon seemed to wish to operate, as he is getting along very well without surgical interference.

The history shows that he fell off a truck in France,—the true condition had not been suspected. Two years after injury or trauma that produced the condition above, the diagnosis was made.

Dr. T. Z. Cason, Jacksonville:

I have seen one such case as those just reported, and the interesting phase of this case was the symptoms.

She came to me for persistent morning nausea and vomiting. Previous to that she had had some disturbance with the back. The doctor had had her in bed with a pillow under her back, which elevated it. Some time later she began with persistent nausea and vomiting.

I was attracted by the singular tympanitic chest. We put a stomach tube in to blow up the stomach, worked it out and then forced it back in again. And then we noticed that the heart sounds were practically gone. We then sent this case to X-ray, and, of course, diagnosis was definitely made.

Another interesting thing in this case has been the treatment. It was practically a year ago that we X-rayed her, and since that time she has had only one bad attack of this morning nausea and vomiting. She worked out her own case with us, and we have found that if she keeps her stomach empty for about two hours after getting up, that she is then able to take a semi-solid breakfast. The noon meal has to be the largest meal, which still must be comparatively light. And dinner must in turn be a comparatively light meal. We have had it definitely outlined just exactly what she is allowed to eat. The attack that she has had in the interval lasted approximately ten days, at which time she had to have repeated gastric lavages and keep the stomach practically empty until there was sufficient muscle tone to produce contractions. That was about one and one-half months ago, and since then she has been getting along very nicely.

I do think that some of these cases will present marked symptoms, but if watched very carefully and dieted very carefully, in matters like that of breakfast, in cooperation with the patient, you will get some results.

Dr. L. W. Cunningham, Jacksonville, (closing):

One of the cases reported in the literature was operated upon for a supposed appendix, which could not be found. She was closed up and later studied with the X-ray. We then found a condition of this type. Of course, there was no appendix down in the abdomen, because the colon was up in the left side.

These cases are exceptionally interesting, and I want to thank the gentlemen for their valuable discussions.

One of the greatest dangers is to consider it a case of pneumothorax and stick an aspirating needle in. Again, there is the question of dextrocardia. There is no doubt in my mind that a lot of these cases are of the type Doctor Dickinson mentioned, and are caused by hernia or some congenital defect in the diaphragm. Such a condition is suggested when we get puzzling conditions in the chest wall. The barium-meal study is a very wise procedure in trying to clear up this possibility.

THE PRESENT STATUS OF DEEP X-RAY THERAPY.*

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Deep X-ray therapy at the present time implies the use of X-rays generated by a tube operating at 200,000 or more volts. The energy emitted from an X-ray tube consists of a beam of rays composed of waves of different lengths. The lengths of these waves depend upon the voltage applied, the higher the voltage the greater the percentage of waves of short length, and the shorter the wave length, the greater the penetration. Since the biologic reaction depends upon the quantity of radiation absorbed, the practical advantage to be gained by the use of waves of short length in therapy is that a relatively greater dose can be delivered at a given depth when compared to that administered to the skin. One of the real difficulties in the radiation treatment of deep-seated malignancies has been that because of the absorption of a major portion of the rays by the skin and other overlying structures, a sufficient dose could not be delivered to the tumor without doing irreparable damage to the superimposed structures. There are many physical factors other than voltage, such as the type of filter, target distance and size of port that influence the relation of the skin to the depth dose. These are of interest to radiologists only and need not be considered here. About four years ago certain men who had just returned from abroad announced the use of much higher voltage and corresponding rays composed of shorter wave lengths than had been theretofore available. Up to that time there had been no tube made that would tolerate more than 140,000 volts at con-

*Read before the Fifty-first Annual Meeting of the Florida Medical Association, held at Orlando, May 13, 14, 1924.

tinuous operation. I would like to show a chart to demonstrate the comparative dose of radiation at the skin and at a depth of ten centimeters, using 140,000 volts and 200,000 volts.

Chart showing comparative depth dose using 140,000 and 200,000 volts—50 cm. distance, .75 m.m. copper plus 1 of aluminum. Size of port 20 c.m. square.

Depth	140,000 v.	200,000 v.
Surface	100	100
5 c.m.	44	75.5
10 c.m.	28	46.5
15 c.m.	17	24
20 c.m.	7	12

Another great advance in radiation therapy has been the development of instruments that measure both the quantity and quality of the output of an X-ray tube. With these instruments physicists have worked out charts showing the percentage of the skin dose that reaches each centimeter of tissue under given conditions, and it is now known that practically homogenous radiation can be produced in any cross section of the body by using two or more ports of entry. I therefore feel that the future advance in radiation therapy will be along the line of improved methods of application rather than in the production of rays of shorter length and correspondingly greater intensity, to the end that the most desirable biologic reactions may be produced.

With the announcement of the use of higher voltage came the so-called carcinoma and sarcoma dose. We were told, assuming the maximum skin dose to be 100 per cent, that carcinoma cells would be destroyed by from 100 to 110 per cent, and that sarcoma would yield to about 70 per cent. In other words, all that was thought necessary was to measure the patient, localize the tumor, and figure out a plan of attack that would deliver the proper percentage into the tumor, and all the malignant cells would be killed, taking care, of course, that an excess of this amount was not administered to normal structures.

The fallacy of this theory was recognized by most American operators, because there is great variance among radiologists as to the amount of radiation that constitutes a maximum skin dose. There is also a difference in the skin tolerance of various individuals, and in different parts of the body in the same individual; further, there is a marked difference in the radiosensitivity of tumors of like histologic structures. Although the fallacy of this theory was recognized, it has furnished the basis for experimental work in deep therapy, and it is used today as a basic factor of

safety beyond which radiation must not be pushed. It has in this way been of undoubted value, and may in time lead to a standard biologic dose.

As to the field of usefulness of deep therapy: The time since its introduction is too short to speak of cures. Available statistics all indicate that it is a distinct improvement over previous methods. It is my belief that every deep-seated surgical malignancy should have as an adjunct to surgery, radiation either in the form of X-ray or radium, and in many cases a combination of the two. Used pre-operatively, it does not interfere with the surgical treatment, and many cases that appear inoperable, after radiation will become operable, used post-operatively, cells that may have been missed or displaced by manipulation during the operative procedure will be destroyed, or at least inhibited in their growth, and the probability of metastasis thereby reduced.

In malignancies about the tongue and mouth only relief. Very surprising results may be obtained. Large sloughing, bleeding masses will disappear, metastatic nodules melt, and the patient be given a period of usefulness and relief from pain. Many inoperable cases of breast malignancies have outlived their five-year period and could be called five-year cures due to the benefit of radiation alone. I have, however, recently seen a metastatic recurrence in the axilla twenty-five years after the removal of the breast, and I doubt if we can ever talk of cures until the patient has died from some other disease.

In malignancies about the tongue and mouth external radiation with X-ray, and radium imbedded into the structures about the primary lesion, offer as much or more than any form of treatment. All that can be hoped for is palliation.

Mediastinal malignancies, due to their inaccessibility, are practically non-surgical. As a class, they do well under radiation. A large percentage belong to the group of lymphoid tumors such as lymphosarcoma, Hodgkin's disease, and lymphatic leukemia, and it is well known that these constitute a group of tumors most sensitive to radiation. Recurrences eventually take place, but quite a number of cases are doing well years after radiation.

As a class, malignancies of the upper gastrointestinal tract are not suitable for radiation. A few isolated cases have been reported in which

the results seem to justify the method, but as a whole, the experiences have been most discouraging. In the rectum, however, I feel that the combination of radiation with surgery in the operable cases, and radiation alone in the inoperable ones, offers the patient a greater chance for a prolongation of life and comfort.

In cancer of the cervix, X-ray combined with radium offers the best results unless the case is clearly operable; and in some of the foremost clinics of this and foreign countries, cancer of the cervix is no longer considered a surgical disease. Published statistics appear to justify this position. In practically all cases offensive discharge can be controlled, hemorrhage stopped, and pain relieved.

It is natural to ask what the dangers attending this method are. Reactions are to be expected in any case receiving a large amount of radiation, and they may be divided into local and systemic. The severity of these depends upon the quantity of radiation given and the individual susceptibility of the patient. Of the local it may be said that a few severe reactions have been reported, all in cases in which massive doses have been given and usually repeated in a relatively short time. These are real tragedies and can be avoided by the exercise of reasonable care and judgment. Any agent so active must, of course, have power to do real harm unless used by a competent operator.

The systemic reactions may be divided into immediate and delayed. The immediate are nausea, vomiting and general malaise, coming on during treatment or within a few hours. These are troublesome, but not alarming, and in our experience not so severe as when we were using lower voltage under less favorable circumstances.

The delayed reactions are principally blood changes. These amount to a moderate decrease in the red cells with return to normal as soon as the nausea and vomiting are relieved and the patient has recovered from the immediate result of treatment. The white cells at first show a slight increase and then a secondary leucopenia. Its degree corresponds with the amount and intensity of the radiation, prolonged treatment producing the most marked changes. Waters has reported that if the white count is forced below 2,500 it does not return to normal, and the patient dies of aplastic anemia.

As more experience is gained in the use of radiation, we are learning that each case pre-

sents an individual problem. A uniform method cannot be followed; each case must be studied and the treatment administered in such a way as to bring about the most desirable results. Patients that are cachetic and already in a hopeless condition do not well tolerate heavy radiation. All that can be hoped for in this class of patient is palliation, and the treatment should be administered in short, frequent periods, avoiding the depression of a severe systemic reaction that will follow intense treatment. In the cases that offer a more hopeful prognosis, radiation should be pushed to the limit. In these cases, by proper care, and by dividing the treatments over a number of days, the severer reactions may be avoided. At best a heavy series of radiation is a severe strain upon the average patient, and it is necessary that these patients have the most careful supervision and nursing during this period. It is not uncommon to have a patient sent in from a nearby community expecting to be treated and returned home the same day. This is out of the question. To satisfactorily radiate any deep-seated malignancy requires from three to ten hours, and, if given in one day, will make the patient very ill. Whatever natural resistance the patient may possess would be given a severe shock and probably more harm than good would result.

In closing, I wish to say that the point of greatest importance is that we must not lose sight of the fact that we are treating, not malignancies, but patients afflicted with malignancies; that once a diagnosis of malignancy is established, the patient's hope of a cure or prolongation of life depends upon the united effort of the family physician and the surgical and radiological consultants.

CONCLUSIONS.

1. Radiation is of advantage in conjunction with surgery in the treatment of operable malignancies.
2. In inoperable cases it offers the patient at least a hope of prolonged life, relief from pain, and a period of usefulness.
3. It is accompanied by certain danger, all of which can be controlled if due care is used.

DISCUSSION.

Dr. L. W. Cunningham, Jacksonville:

Our experience with deep therapy with the present type of high-voltage apparatus has been very encouraging as compared with the results

with the old ten-inch apparatus. We have, however, seen malignancies progress and move on to a rapidly fatal outcome despite careful and thorough X-ray treatment. This leads us to say and emphasize Doctor Dickinson's remarks that the treatment is of the patient and not alone the malignancy. We find it useless to follow some set rule as to dosage but look more as to the individual's reaction to the treatment and divide the total dose up into parts that will not too greatly depress them. While the X-ray has a biologic effect, it is also an agent that stimulates the processes of repairs of the patient and these will not function well, or at all, if the patient's vital forces are markedly depressed. In the use of the ten-inch machine, we saw good results and they were secured with the divided dose technique. We must say that we have seen masses melt away and disappear much more readily with the twenty-inch apparatus than we did with the ten-inch. We are far from optimists and are reluctant to consider a lesion as arrested until time has demonstrated it well. And, in our personal experience, the time has been too short. We recently saw a case of mastitis that responded readily to one treatment with prompt relief of pain after using the usual measures. We have treated a number of cases of metorrhagia due to different causes, having had a careful study beforehand by the surgeon and genecologist to eliminate malignancy. If any such doubt exists in our minds as to the possibility of malignancy, we vigorously radiate the entire pelvis of that patient. I might note that a case treated several years ago came to operation later, and the uterus had shrunk down to so small a size that it was hard to recognize it.

We would again emphasize the point that Doctor Dickinson has made that patients when sent for deep therapy X-ray treatment must come expecting to spend as much time as if they are going to be operated. Those who are vigorous and can apparently stand a large volume of treatment in a few days get a severe jolt from it and as a rule go home and are depressed for some days.

We would like to make a point, and one that we consider most important, and that is a careful study of the lungs and chest wall should be made for evidence of metastasis of malignancy before any surgical, X-ray, or radium treatment is given. We regularly study all patients who are treated for lesions about the chest, or head and neck for

this possibility. We saw, in the last year, one patient with an apparent early malignancy of one breast with metastatic lesions in the base of the opposite lung. We had another patient referred for treatment with a dry, unproductive cough but not marked ill-health, and found both lungs full of metastatic lesions. It would seem from our experience that every patient before being operated should have the lungs and chest wall studied for metastatic malignancy.

We have treated malignancies of many parts of the body, some with very encouraging results, others with palliative benefit, and some with none, but we feel that a great field of usefulness lies in the proper application of the short wave length X-ray in deep therapy. We are far from discouraged by those that we do not benefit as some of the most discouraging cases at the beginning of the treatment are the ones who are most benefited.

Dr. H. B. McEwan, Pensacola:

I wish to compliment Doctor Dickinson upon his excellent paper, in which he has covered the field of malignancies very well; however, there are a few points upon which I do not agree. First of all, as to skin tolerance, some writers in the past claimed that blonds were more susceptible to X-radiation than brunets. This I have disregarded entirely as while it is true that the erythema looks redder against a fair skin, it is not more intense and clears up as readily as in the brunet. I do find that several areas of the body as compared to skin on forearm to be more sensitive to radiation; namely, neck, scrotum, crease in buttox and soft skin on flexor surface of joints. I make no distinction in my dose between a carcinoma and a sarcoma, but give both the maximum I consider safe for the patient, delivering this to primary growth and lymphatics draining this area. We must not assume that a malignant growth, no matter how early it is diagnosed, has not metastasized but rather consider that it has and treat as such, *i. e.*, radiate all cases pre-operatively, not only the primary growth but its lymphatic drainage system, and when this is done I feel sure our statistics on malignancies will be much better. I am sorry that Doctor Dickinson did not mention his results with deep therapy in uterine fibroids, toxic goiters and the metorrhagia as these cases in my hands have shown remarkable results.

Dr. J. C. Dickinson, Tampa (closing):

I have nothing to add in closing except to thank Doctor Cunningham and Doctor McEwan for their discussions.

Dr. McEwan mentioned the question of the use of higher voltage in toxic thyroids and fibromas. I have been using 200,000 volts for uterine fibroids on the limited number of cases that I have seen, with what we believe to be very satisfactory results. I don't know that it is particularly more satisfactory than we were having with 140,000, so far as results go, but I do think that we accomplish results more quickly and with greater comfort to the patient. In toxic thyroids I have never used a higher voltage, believing that we were able to do it perfectly well with 140,000 volts. With the smaller voltage, the tube is more flexible and the technic easier. I am sure either will accomplish very satisfactory results, but I do not think there is any particular advantage in using the higher voltage in thyroids and fibromas.

CLINICAL STUDIES IN MIGRANE AND EPILEPSY.*

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New York City.

An interesting phase of modern medicine is the great diversity in the symptoms which have been proven to spring from a common cause. This cause is, of course, the well-known factor of *focal infection*.

It is in the hope of enlarging the scope of our present knowledge regarding the relationship of focal infection to two common syndromes, that I present for your consideration a short abstract of the clinical history of eighteen patients suffering from *Migrane* and *Epilepsy*. It does not require great courage or unusually progressive qualities to be willing to work upon the hypothesis that these disorders of unproved origin may be in some way associated with *focal infection*. From time out of mind the problem has been approached from many angles. The Greek physicians commenting upon epilepsy, which had been known, since the earliest records, as the "sacred malady", declined to admit that there was anything more sacred in it than in any other disease of the human body. Today, it would appear that they were right. The history of their

research into this and the allied psycho-neuroses is interestingly portrayed in the recent volume by Paul Lecene entitled "The Evolution of Surgery." It presents with that clarity and fairness, so characteristic of the French, the history of the titanic struggle, which from time immemorial has gone on between those of our profession, the surgeons, who have dealt with the actual visible facts of medicine, and the physicians, that great group, having a more conservative, more philosophical, more hypothetical viewpoint.

Happily, at the present day the sciences of *biology* and *chemistry* have so effectively come to the rescue of clinical medicine, as to have active representatives in almost every branch, so that this conflict has nearly ceased. Indeed, it would appear that the only exception to this is to be found in the rather small, though still powerful and important department of metaphysical medicine.

Many of the protagonists of this ancient line resent scientific "intrusion" into their specialty, and seem to be the direct descendants, the sole survivors as judged by their thought and action, of the ancient Egyptian priesthood; the theurgists of the Nile. The strain is old and vigorous, being deeply entrenched in the spiritual life of the people. It controls through mystery. It is no doubt well, however, that science should not at once dominate. Easy success in any line is apt to be unstable. During the past ten years, scientific, that is to say biological methods, have slowly infiltrated these metaphysical fields of medicine. This has occurred, not without the usual objections; the ridicule, the vigorous obstructions, which go with the substitution of new ideas for old. But, being a part of evolution, these are here to stay and to grow. Thus, happily, we are getting back to the majestic viewpoint of the Greeks, leaving behind the less stimulating, though more picturesque vestiges of medieval and monastic medicine.

Even though desirous of avoiding controversy or of appearing intolerant of the metaphysical viewpoints of one's fellow-practitioners, it is impossible, especially from the standpoint of the patient, not to view with satisfaction these inroads of scientific medicine into the hitherto taboo regions of psychoanalysis and medical metaphysics. For, if recent reports are corroborated regarding the effect upon psychotic patients of the substitution in their therapeusis of surgical and biochemical methods, in place of

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psychoanalysis, these methods will come into general use. I refer to statements emanating from the State Hospital for the Insane at Trenton, New Jersey. The final report, which is about to be published, from this institution, shows that during the six years past, in which modern methods for the removal of focal infection have been in vogue, the psychotic patient being treated as a physically sick individual, there has occurred an increase in the discharge rate from thirty-six per cent to eighty-five per cent; and a financial saving to the State of something over a million dollars.

Indeed, it is high time that something be done to check the alarming increase in psychotic cases, as reported by the National Committee on Mental Hygiene. Between the years 1880 and 1920, under a psychoanalytical therapeusis, insanity increased 468 per cent, while during the same period the population of the United States increased but 112 per cent; a staggering increment over fourfold.

A recent field survey by physicians in place of nurses, of over fourteen hundred patients treated at this progressive institution by detoxication through surgical and biochemical intervention, and discharged showed that recurrence could be traced by physicians in only fifty-four cases. Encouraging reports are beginning to come in from other state institutions for the insane, so that today, it is safe to say that from now on, the physical care of the psychotic patient will dominate his therapeusis. The tireless efforts of the director of the Trenton Hospital, Dr. Henry A. Cotton, to inaugurate a therapeusis for the so-called "functional" psychoses by which something practical is done for the patients, beyond endless metaphysical classification, psychoanalysis and custodial care, have been at last crowned with success. This is not to be understood as implying that the older methods are valueless, or as decrying the work which has been done by competent people along these lines, for all truth is priceless. Tolerance and impartial judgment should mark the progress of this intricate and important work.

It is evident that symptoms of disorder in the human body even so remote as cardio-renal lesions and "functional" psychoses, are traceable to the toxemia of focal infections. It is certainly pertinent, therefore, to carry on an investigation as to the possible relationship of lesions which may properly be looked upon as occupying an

intermediary position between these two extremes. I refer to *migraine* and *epilepsy*.

The following abstracts of histories extending over a period of from one to ten years, compiled without bias, are offered in evidence that these two prevalent and distressing and disabling disorders are, like the psychoses, the neurasthenias, the cardio-renal and the arthritic lesions, also primarily of bacterio-toxic origin.

By this is meant not the ordinary or pus-producing bacteria, but the far more dangerous, more lethal group of streptococci, the pathogenic forms of colon bacilli, and probably some other forms, as yet not definitely recognized. These bacteria are harbored characteristically by the host without their presence being known or even suspected. For they cause neither pus nor pain nor any of the common evidences of inflammation, and are often in remote regions of the body. It is for these reasons, largely, that they have been overlooked, and their importance underestimated.

A. A. OFFICE No. 5662.—Age 46, trained nurse, committed to State Hospital at Trenton, N. J., 1911. Violent headaches since her fourteenth year. At first occurring six times yearly, each attack a week or ten days' duration, much so-called "stomach trouble", nausea and vomiting. Diagnosed as maniac depressive insanity, depressed phase. She was disoriented, indifferent, filthy, destructive, impulsive. In 1916, one upper molar extracted. Two months later began to show marked improvement. Her only memory of her previous condition was of severe headaches. The oral foci was removed with continued mental improvement, and in November, 1919, the left colon was removed. It was extensively diseased. She is now in charge of a surgical ward in a well-known hospital, and has reported within several months that she has had no headache since the operation.

CASE No. 3789.—(Office). July 5, 1915. Age 44. Chief complaint, headaches, hemicranial, always on left side, duration seventy-two hours, every two or three weeks, disability complete, prostrated in bed. At the thirtieth hour of headache, the left nostril closes, right does not; has had pyorrhea, three teeth recently extracted, amebæ found, *no effect on headaches*. Constipation, has had protein free diet since 1912, at which time, as shown in chart, which she has kept methodically since 1911, her headaches fell to thirty-five. This year, however (1916), in

spite of no protein, they have risen to sixty-five per annum, confining her to bed for a little more than half the entire year; occurrence and severity same as 1910-11.

Constipation, Congenital: Severe. Takes cascara nearly every morning. Headaches always preceded by mucus. Constant enemas necessary, particularly during headache. Onset of headache begins with tingling pain over left eye, a few minutes later distress in left side of abdomen, followed by tingling in throat. As headache progresses all the special senses become exaggerated. Photophobia and intolerance to the slightest noise. Physical examination negative, except for slight rigidity in the right lower quadrant.

Radiographic Report: Stomach and small intestine normal. At 102 hours p.c. the *entire meal lies in the caecum and right colon.* Enema, marked filling defect, hepatic flexure, mechanical abnormality at this point, probably due to bands. Headaches first occurred when seventeen years of age, being preceded by a severe attack of abdominal pain. Patient felt "as if the bowel movements had been reversed." Operation October 10, 1916. Immense mobile caecum with common mesentery to ilium, could be lifted six inches above the abdominal wall. Resection of entire right colon, part of transverse and terminal ileum. Heterostaltic lateral anastomosis between ileum and midtransverse colon. Cessation of constipation and headache. Five months after operation able to eat eggs freely. For past six years she had not been able to eat an egg without the certainty of a headache. Headaches gradually returned, but with less frequency and less severity. Two years after colectomy, she was found to have an infected cervix, also infected teeth and tonsils. In March, 1919, culture from crowned tooth showed streptococci. In May, 1920, had lost fifteen pounds in six months; constipated, could not eat an egg. March to June, 1921, both antra opened and curetted. Large number of polyps, soft bone and pus removed. Reversal in blood count so often seen in chronic intestinal invalids. March 24, 1921, r.b.c., 4,606,000; w.b.c., 4,600; polymonuclears, 37 per cent; lymph, 56 per cent. Six months later patient had gained eighteen pounds, no more headaches. January 22, 1924, polymorphonuclears, 66 per cent; lymph, 30 per cent: a return to normal.

This full abstract is given to show how such case should not be handled. The serious operation of partial colectomy was done first, all the minor foci being left in situ. This is a serious mistake. Notable improvement occurred after the colectomy and this improvement increased with the gradual removal of the foci. Of course, in the light of today's knowledge, the minor infections should be removed first. It was not until every vestige of osteomyolitic bone in the floor of the left antrum was removed that the headaches ceased entirely.

OFFICE CASE No. 4270.—Age 17. Male. At thirteen obliged to leave school. Weighing only 59 pounds. Moderate headaches. Complete change of personality. Ungovernable attacks of temper. Suicidal. Shunned everything requiring physical effort. Morbid fears. Homicidal, tried to shoot father with his airgun. Chronic constipation. Right-sided resection of diseased colon four years ago (1920). He now stands in the first eighteen in a high school of 550 pupils, is free from nervousness and headaches and his personality has returned to normal.

OFFICE CASE No. 5084.—Age 36. Female. Chief complaint, migraine. Patient was a nurse. Served with distinction over-seas. Very high-grade mentality, therefore her own description of the attack is given: "Two or three days previous to a headache my tongue is coated, no strength in legs, severe palpitation, so cold, unable to get warm, dull feeling back of my head, I feel I should support it with my hands. Then a neuralgic pain starts and my face becomes flushed and very hot. I have to get my head down in a dark room. Then vomiting starts, keeps up for 24 to 36 hours. Much flatulence. My hands would go to sleep. Severe hunger pain, but if food was taken it was not digested. Previous to colectomy I was having these attacks as often as every ten days." Patient weighed 114 pounds. Pressure, 120-80; pulse, 88. Tonsillar infection. Severe leucorrhea. Infected rectum. Severe dental defection. All these lesions should have been attended to surgically before colectomy, except for the extreme severity of the attacks and the definite signs of intra-abdominal lesions. Gastrointestinal X-ray showed chronic pericecal inflammatory changes, an ironed-out colon, and omento-pelvic adhesions. May, 1923, right-sided resection of colon. Marked mesenteric adenitis, other foci removed later on. Since

operation bowels, which had not moved previously without strong cathartic or enema, have been normal. Condition satisfactory to date, no further attacks.

OFFICE CASE No. 4089.—Age 52. Female. Teacher. Chief complaint, progressive constipation for fifteen years: hemicrania; melancholia; suicidal. Blood pressure: Averaged systolic 235; diastolic, 150. Partial colectomy for diseased ceco-colon and obstructive adhesions in 1914. Marked betterment mentally and physically. Fairly well, until 1918, headaches reoccurred. Definitely worse after extensive dental "repair," in the course of which much severe infection was sealed in.

Nineteen fifteen to nineteen-sixteen, she went through the whole year without any break in her teaching work, which had not occurred for many years, and in spite of the fact that all foci had not been removed. Gradual recurrence of headache, 1918 to 1923. Early in that year developed severe impairment of vision, together with scotomatous areas for colors. Sphenoidal and ethmoidal cells cleaned out, almost immediate, complete return to eye normalcy. No headaches for past year.

W. R.—Male. Idylease Inn. Age 48. Chief complaint inveterate prostrating headache, 30 years. Always left sided. Often in bed. Dark room three days a week. Vomiting very severe. Sent to California and elsewhere. Ordered to retire from business. No physical defects in this patient except left antrum, when third left molar was removed, February, 1921, floor of antrum came out attached to the tooth. Immediate, permanent recovery.

OFFICE No. 5404.—Female. Age 38. Chief complaint, disabling migraine. Similar headaches occurred in mother and two brothers. "Bilious attacks" for ten years. Prostrating headaches for past two years. Exhaustion, abdominal pain, blood pressure, 103-65. Held important business position from which she was about to resign. October, 1923, appendectomy, oophorectomy, conical enucleation of cervix and anal sphinctomy.

The chief focal infection in this patient was in the cervix, whence an abscess containing over a dram of pus was drained in the course of the cervical enucleation. The migraine ceased, the patient being detoxicated.

OFFICE CASE No. 4898.—Age 38. Constipated. Appendix removed seven years ago. Several "nervous breakdowns." Subject to terrific headaches all her life. Occasionally required four hypodermics of morphia to get relief. All third molars unerupted, cervix infected; rectum ulcerated; both antra infected; opened and curetted; impacted and dead teeth removed; cervix enucleated; rectum split posteriorly. Cessation of headaches since detoxication.

The following cases are records of patients having epilepsy:

CASE No. 5065.—Female. Age 8. Father a surgeon. Moderate bowel disturbance at three months, soon after which developed rickets. First convulsion in seventh month. Mucus in stool appeared simultaneously and in increasing amounts. Rapid increase in frequency and severity of convulsion. About one year from onset she had fifty-two in eight hours, nearly died from exhaustion. Saline colon irrigations twice daily started, so that between the third and fourth year of life over seven hundred saline irrigations of two quarts each had been given since then the number had averaged one daily. Diet limited to cereals and vegetables, deviation from this caused immediate increase in her attacks. Personality: Backward but not defective. Had played with blocks until seventh year. Had just begun to play with dolls. Difficult to reason with, very obstinate; punishment made her worse. If irritated it was difficult to quiet her, became very destructive, tore up books and her dolls' clothes. Had recently become very quarrelsome with her sister. Unable to associate with other children, or to go to school. X-rays showed badly diseased, "ironed-out" colon. May, 1923, total colectomy. The mesenteric adenitis was marked, many of the glands were the size of almonds, particularly in the small bowel. December 10, 1923, her father reported that there had been a very gratifying improvement in her personality and that she had only twelve major attacks from time of operation until September 6th, when she had an attack of petit mal. She is now at Dr. Hollowell's school in Atlantic City—doing well in her mental work and playing and working freely with the other children. No convulsions since September, bowels moving two to three times daily without medication. Satisfactory gain in weight.

CASE No. 4448.—Negro. Age 24. First attack when fifteen years old. When twenty years old attacks constantly increasing in number and severity, never less than two or three a week and sometimes as many as twelve in a day. Not infrequently he had six convulsions in almost immediate succession. There was no period between his fifteenth and twentieth year when he was free from attacks for even a few days. Unable to work, severely disabled. January, 1922, total colectomy. Since operation, attacks never oftener than once a month, four in all, the last one being petit mal. His mother reported that in addition to the cessation of attacks his disposition had changed entirely. He had become so irritable that it was almost impossible to get on with him. Patient is now earning his living, and riding horseback several hours daily. No attacks for past year.

CASE No. 4915.—Male. Age 18. Nephew of a surgeon. Convulsions controlled by diet from the seventh to the fourteenth year. Attacks since then frequent and severe. Mental impairment. History of gastro-intestinal invalidism and of colonic irrigations. Under luminal and pituitary extracts for past five years. Reached second year in high school. Snow crepitant of cecum with tenderness and rigidity one plus. Right-sided spasm two plus. X-ray showed colitis, most marked on left side. Some pathological condition in the ascending colon, unusual, could not be interpreted. Total colectomy October 19, 1922. Enormous number of enlarged mesentery glands around cecal vessels. Very marked angulation of colon at hepatic flexure. Beneath the cecum and held under the pericolic membrane appeared a coil of ilium from which there extended a Meckel's diverticulum. It was adherent to and obstructed the ascending colon, and also the ileum. The acute appendicitis requiring operation three years previously was probably the result and not the cause of the peculiar relationship of the diverticulum to the colon. Mesentery of sigmoid packed with glands. Slow improvement. Patient continued hazy and confused; would put his clothes on backwards and soil himself unless supervised.

April 10, 1923, diurnal major attacks had entirely ceased. Now only nocturnal. Loses consciousness only about once a week. Character of attack about the same as before, personality greatly improved. Associates again with other boys, has gained 25 pounds. Present condition,

eighteen months after colectomy, grand mal attacks have ceased, petit mal without loss of consciousness and characterized only by a slight momentary tremor of face or extremities about twice a week. More able to take care of himself: greatly improved in every way.

OFFICE CASE No. 4124.—Age 34. Female. Always had intestinal trouble. Epilepsy developed at twenty-first year when university student. Completely disabled mentally and physically. Severe seizures; three to four weekly. Severe constipation. June 8, 1917, resection of right colon. June, 1919, reported in good condition. Bowels moving twice a day. July, 1921, cervix enucleated and tonsils removed. May, 1923, one attack, the first since colon operation in 1917; severe convulsion, immediately X-rayed; marked colitis in remaining portion of colon. June 1, 1923, remainder of colon removed. Dr. James Ewing reported that the specimen consisted of ten inches of ilium and twenty inches of colon. Colon much dilated. Mucosa atrophic. Showed several superficial erosions and several herniae 1 to 2 cm. deep. There were many peritoneal adhesions. The whole colon was edematous and slightly pigmented. The lymph nodes showed no definite change. Slight diarrhea for four weeks. Bowels now moving twice daily. No recurrence. Has gained 60 pounds since 1917.

CASE No. M. H.—Age 35. Female. Dressmaker. Chief complaint epilepsy. Attacks since she was eighteen months old. Chronic constipation. Took Pluto water or enemas habitually. Seriously disabled. X-ray showed very severe colitis, apparently worse on the right side. Right colon resected December 8, 1920. Attacks continued but reduced in severity and frequency. February 24, 1921, the left side of the colon was removed. Marked improvement. This patient is now able to earn her living at dressmaking and while she has occasional attacks is in every way much better off than before the colectomy. Says she would gladly undergo operation again if necessary.

OFFICE CASE No. 4215.—Female. Age 19. Chief complaint, epilepsy, since she was eight years old. Chronic constipation and purgatives. November 12, 1921, total colectomy. May 12, 1923, patient reported by her doctor to be much improved. "Her whole attitude toward life is changed and her disposition has returned to normal." December 11, 1923, still has occasional

attacks; less severe. Three or four movements a day. Never falls as she used to. Has been working three weeks as a practical nurse. Personality restored.

OFFICE CASE No. 4163.—Male. Age 21. Epilepsy since two and one-half years old. Resection of sigmoid in 1920. Some diminution in frequency and severity of attacks. Resection of remainder of colon July, 1921. December 17, 1923, had severe attack, fell and injured face. January 10, 1924, severe attack, unconscious half hour, several petit mal attacks. Although this patient is improved mentally, and has been able to work as a newspaper reporter, the attacks continued. The only real improvement has been in the cessation of the constipation and in his mentality. There are probably undiscovered foci of infection.

OFFICE CASE No. 4125.—Male. Age 3. Epilepsy. Although taking from 40 to 50 grains of bromide daily, the day before operation he had three severe convulsions. Day of operation had five; moreover, he had undergone extensive temperamental changes from a sunny, happy child and one easy to manage to an ill-tempered and fractious child, controlled with difficulty. November 13, 1918, removed the entire right colon with as much of the transverse as could be reached, together with about twenty c.m. of terminal ilium. This child was improved immediately, and has grown into a strong, vigorous individual with marked improvement in personality. The major attacks were converted into petit mal of which he occasionally has evidence. Remainder of colon should be removed. Cannot obtain parents' consent because he is so nearly well.

OFFICE CASE No. 3960.—Male. Age 6. Normal until two years old. Epileptic convulsions developed soon after. Mental arrest. Uncontrollable, purposeless activity. Operation November 6, 1918. Almost complete terminal ileac obstruction. Marked mesenteric adenitis. Three months later his personality has become practically normal. Purposeless physical activity had ceased to such a degree that he was no longer a burden to his mother. He continued to have attacks of unconsciousness; these were, however, greatly reduced in frequency and severity. Two years after operation the principal of school which he attended reported him normal. No report since. Entire colon should have been removed.

OFFICE CASE No. 5043.—Male. Age 19. Epilepsy, irritability and nervousness. Patient had been confined in State institution because of his bad temper. On studying him it was found that the chronic colic, the indigestion, constipation and heartburn from which he had suffered since infancy, were associated with non-rotation of the colon. Operation December, 1922. Colectomy, no permanent improvement in personality, in severity, or in occurrence of attacks.

An analysis and interpretation of these case histories is both valuable and instructive. In the first place, it shows that the symptoms called "migraine" and "epilepsy" can be mitigated in most instances and arrested in some, through surgical removal of focal infection. Of the eight migraine cases reported, a cessation has occurred in each. This is encouraging. It may not be permanent. Five required colectomy; two of these were not entirely relieved until after the removal of dental infection. Two were relieved chiefly through the removal of cervical infection. One from the drainage of an antrum.

In every instance a medical survey of the *entire individual* has been made and all the recommendations based on these findings have been carried out, the simplest and safest first. This study of the individual, *as a whole*, is perhaps the most important consideration in dealing with these intricate conditions. It is essential, whatever the nature of the symptom, but particularly in the investigation of migraine and epilepsy.

Of the ten patients presenting the symptom called "epilepsy", in addition to the removal of all the ordinary focal infections wherever found, the colon had been excised, in whole or in part, in each case. Nothing final is known as yet regarding the bacterial flora of the colon in relation to systemic disorders. The toxemia may or may not be, in whole or in part, of bacterial origin. This problem will be studied, and some day elucidated.

In three patients the attacks have been arrested. In three the major attacks have been arrested but occasional, slight attacks of petit mal continue. In two, occasional mild grand mal continues, much reduced in severity, and both patients have been able to go to work. In one of the two remaining cases there has been only very slight improvement and in the other, none. In two, (4124 and M. H.), partial resections had to be made complete and in two more (4125 and 3960), this should be done, but parents refuse

to take the risk, being satisfied with the improvement. Therefore, if colectomy is indicated in a given case of epilepsy, it should be total at first operation.

Aside from cessation or diminution of convulsions, the most marked change has been in the restoration of, or improvement in personality. This has occurred in all except the two last. Grand mal appears to have been converted into petit mal in at least two cases. The tendency has been to change diurnal attacks into nocturnal, indicating a lessening of the convulsive factor.

In all of these patients there was very pronounced damage to the colon. In two (4915 and 5043) there were exceedingly severe congenital defects, complicating the colitis, namely, partial obstruction from Meckel's diverticulum in the first, and in the second, a more complete obstruction (barium delay of ten days) associated with non-rotation of the colon. Without exception, the eighteen patients constituting this study, presented well defined surgical pathology of the abdomen: pericolic membranitis, mesenteric adenitis and chronic proliferative peritonitis. So little is known about the function of the colon in health, that it is important to note that in the fifteen reported cases colectomy was total in ten and partial in five. In none has there been the slightest difficulty with diarrhoea; constipation has ceased; there has been a satisfactory gain in weight in adults, and growth has continued in children.

As it is impossible here to offer these studies in full, a part is presented and purely as a study rather than as an effort to further any definite therapeusis. It constitutes a report on progress and a plea for the more thorough investigation of the *physical individual as a whole*.

No conclusion, therefore, is to be sought as yet, but the evidence points encouragingly toward focal infection as an important causative factor in Migrane and Epilepsy.

NOTE REGARDING EPILEPSY. *A supplement to Dr. Draper's paper.*

In 1921 a Miss M. S., age twenty-six, came under my care suffering with epilepsy. Five years previous while following her vocation of school teaching, she began to have mild epileptic seizures. They increased in frequency and severity until she was compelled to give up teaching.

Nine months later she obtained employment as a seamstress, but two years later became practically dependent upon an aunt. Her seizures were frequent, and she developed a headache of increasing intensity. Family history negative. No history of injury could be elicited. Nose and throat negative. Tonsils had been removed six years previous. There were several dead teeth noticed and upon physician's advice pictures were taken. The teeth roots were apparently good, but in the vacant space next to a dead tooth a large, dark area with small pieces of tooth root was noticed. This was removed and cavity curetted by Dr. Whitman. Two or three days later the patient had a mild epileptic seizure. Patient has not been seen since, but nearly a year ago I received a letter from her in which she states that she was back in her old vocation of teaching, in excellent health, save from some slight headache after reading which was not entirely relieved even by the use of glasses.

G. H. EDWARDS.

PUBLISHER'S NOTE

INJECTION DIFFICULTIES.

Almost every physician, some time or other, has on his hands a patient with veins so small or inaccessible that to give an intravenous injection is difficult or quite impossible. This happens occasionally in treating syphilis, for instance.

Till now, physicians in such a situation have found themselves seriously handicapped, especially since the arsenicals most effective in that disease have been suitable for intravenous use only. To inject these drugs intramuscularly would not do. It therefore became necessary to go back to mercury in accordance with old established routine and thus to make the best of it, as we say.

So it was till the new drug, Sulpharsphenamine, came to light. This was produced in America for the first time at the Dermatological Research Laboratories, the Philadelphia branch of The Abbott Laboratories, Chicago. While effective as a spirocheticide, Sulpharsphenamine appears also to have a wide margin of safety so far as the patient is concerned. Some of those who have investigated its practical value, assert that the drug is especially useful in neurosyphilis.

REVIEWS FROM CURRENT LITERATURE

ANEURYSM OF THE AORTA.

The Roentgen Diagnosis of Aneurysm of the Aorta. Ernest Charles Samuel, M. D., Touro Infirmary, New Orleans, La. Amer. Jour. of Roentgenology and Radium Therapy, Vol. XI, No. 4, April, 1924, p. 361.

Roentgenoscope is to be depended upon for evidence of aneurysm and the films made as records only. Evidence may be secured on the screen that cannot be duplicated on the film but as the lesion develops will later be present. Physical signs of aneurysm as usually expected will be absent in the vast majority of the cases due to inaccessibility and the presence of blood clot and organization. Evidence secured early if only suspicious is of great value from the prognostic standpoint in the phase of regulating the patient's life and habits. Patients observed working with Professor Matas who sees many thousands of patients with disease of the vascular system. Roentgen study must be carefully collaborated with the studies of the internist. Ninety-five per cent give positive Wassermanns. Most cases have a small heart.

The Twenty-Fifth Anniversary of the Discovery of Radium. G. Failla, Memorial Hospital, New York City. Amer. Jour. of Roentgenology and Radium Therapy, Vol. XI, No. 4, p. 369. Celebrated at the Sorbonne, Paris, at the initiation of the Curie Foundation. Paper read before the Academy of Sciences of Paris on December 26, 1898. Speeches by eminent men of many countries. Dr. Antoine Beclare in his speech quoted *Le Temps* of December 27th, as follows: "Formerly surgery was the only means to combat cancer. Today there is a happy competition between radium and X-rays and the surgeon's knife. These radiations represent so many bistouris, or rather invisible arrows, wonderfully sharp and piercing, which riddle the whole diseased region and, without bleeding or mutilation, without injuring the skin, they kill in a deep-seated organ the cancer cells, leaving the neighboring cells intact." Pierre Curie dead but his wife, Madame Curie, was present at the celebration and honored by the French nation and also by the world. One gram of radium donated by American women to her is used at the Curie Laboratory exclusively for experimental and scientific study.

COLLAPSE OF THE LUNGS.

Massive Collapse of the Lungs. Max. Rivto, M. D., Boston, Mass. Amer. Jour. of Roentgenology and Radium Therapy, Vol. XI, No. 4, p. 337.

Exceedingly important to the surgeon and clinician to recognize the acute type following a

few days after operation. Symptoms of dyspnoea usually very marked, with temperature and cough suggest anything but collapse of the lung. Roentgen examination shows heart pulled over to the affected side and diaphragm pulled up and apparent emphysema of the unaffected side. Usually return to normal in a week. Is most likely mistaken for pneumonia or lung abscess.

ROENTGEN THERAPY.

Indications of Roentgen Therapy in Chronic Tonsilitis and Pharyngitis, by W. D. Witherbee, M. D., New York City. Amer. Jour. of Roentgenology and Radium Therapy, Vol. XI, No. 4, p. 331.

He continues to feel that good results are to be gotten by proper roentgen therapy and failure will depend on improper methods. His conclusions are:

"Roentgentherapy given previously to operation materially lessens the amount of dissection necessary for the removal of the tonsils, thereby decreasing the possibility of complications. Roentgentherapy is recommended in the following cases:

1. Where an anesthetic or operation is contraindicated.
 2. Those past middle life where hemorrhage may cause complications due to a mild or severe arteriosclerosis.
 3. Patients whose tonsils are embedded in infected tissue in which the operation may cause dissemination of septic emboli into the blood and lymph streams, thus producing lung abscess, septicemia, endocarditis, etc.
 4. Patients whose adjacent lymphatic structures (not removable by operation) are markedly infected.
 5. Patients suffering from chronic cardiac lesions, Bright's disease, diabetes, exophthalmic goitre, chorea, rheumatism, hemophilia, asthma, tuberculosis, status lymphaticus or any condition which has lowered the patient's general resistance.
 6. Patients subject to frequent attacks of peritonsillar abscess (quinsy).
 7. Vocalists and public speakers subject to frequent attacks of tonsillitis and pharyngitis.
 8. Patients suffering from recurrent attacks of pharyngitis after removal of tonsils and adenoids.
- "Some of the unfavorable results obtained by this method may be counted for by the fact that the ray was directed through the angle and the ramus of the jaw instead of through the soft tissues behind the jaw."

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THE PRESENT GROWTH OF THE ASSOCIATION.

The membership of the Florida Medical Association has now passed the seven-hundred mark and there is good ground for the belief that the aim of the present administration, "One thousand members in 1925," will be realized. It is going to require, however, considerable organization work and also the work of the individual. THE JOURNAL now reaches over eight hundred readers, its columns are open for the advancement of medical science and for anything that brings prestige to the medical profession of the state. There are hundreds of physicians in the state eligible for membership who have not been properly approached in the interests of the organization. Many counties are still unorganized. Emphasis should be made that a physician residing in Florida cannot afford to evade his responsibilities toward his profession. As a matter of fact we should go further than this and show our non-affiliated physician that he needs the organization more than the organization needs him. Where would the medical profession—as a profession—be today if it were not for the state and national organizations? Stop for one moment and ask yourself where the profession of this state would be today if it were not for the activities of the Florida Medical Association. The many questions involved in legalizing those qualified to practice and barring those who have not the qualifications have been thrashed out in past meetings of the State Association. If it were not for the activities of a few—and a very few—of the members of the Florida Medical Association, what would the economic status of those members of the medical profession who live permanently in the state be today? To what influence other than that of organization are the high-grade qualifications required for licensure in this state today. To what influence other than that of organization do we owe the existence of our present Board of Medical Examiners. Where would the bona fide physician of permanent residence in Florida be today if it were not for the activities of this Board.

These and a hundred other reasons should be given to non-members in securing their membership. Just as critical situations have existed in the past, situations that involve the very existence of the medical professions, will others arise in the future. Every eligible physician should be affiliated with his state organization, and of

those who may not be eligible, if there is any likelihood that they can be made desirable timber, every effort should be made to bring them properly within the ranks of organized medicine.

THE DELINQUENT.

With this issue of THE JOURNAL a large number, to be exact, sixty-four, of former members of the Association who have failed to pay their dues for the current year will be dropped from the mailing list of THE JOURNAL. Every effort has been made by the Secretary of the Association to collect through the county secretaries the dues of the delinquent members. A circular letter has been issued from the office of the Secretary to each individual member calling his attention to the fact that according to the records of the Association the member is delinquent. In addition to this another letter has been addressed to each county secretary giving a list of the members who were on the 1923 roll of membership, but whose names have not been reported on this year's roster. In some few instances these men have moved out of the state, but with a few exceptions the delinquent member is still a resident of this state, and in too many instances men of prominence in their respective localities. A pernicious evil that has frequently been referred to in these columns in the past, is the member who fails to pay his yearly dues, but is allowed by his county secretary to reinstate himself at any time by the payment of the current year's dues. It is believed that the activities of the medical profession in this state during the coming year, together with the quality of the official publication that the officers expect to put out, will combine to make all members desirous of keeping in continuity their membership in the Florida Medical Association.

"LARVA MIGRANS" CLINIC.

Through the efforts of Dr. J. L. Kirby-Smith, two well-known entomologists connected with the U. S. Department of Agriculture, Mr. F. C.

Bishopp and Mr. W. E. Dove, will be in Jacksonville July 20th, for a stay of some two or three weeks, investigating at first hand the "Creeping Eruption" problem in Florida. The Florida State Board of Health and the City Board of Health will cooperate in the organization and equipment of a free clinic for the treatment and study of "Creeping Eruption." Dr. Kirby-Smith will have assisting him, Drs. Elmo D. French, Wm. W. Kirk, B. L. Arms and J. F. Wilson.

This unusual and interesting affection is very prevalent in Florida, especially at this time of the year with heavy rainfalls. All physicians recognize the importance of the disease and the extreme suffering and annoyance to the patient, and the great difficulty of obtaining a prompt cure.

Creeping Eruption or Larva Migrans is often spoken of by the laity as the "Ground Itch." It is earnestly desired that physicians interested in the work, notify Dr. J. L. Kirby-Smith of patients that they are willing to send to the free clinic, or better still, bring the patients direct themselves. The clinic will probably be held at the laboratory of the State Board of Health.

NO TIME TO SPARE.

It will soon be too late to protect the annual sufferers from fall hay fever by giving them a full prophylactic course of pollen extract; but it is not yet too late. The full course requires six to eight weeks, one injection being given every three or four days. By beginning early, severe reactions can be avoided, the first few doses being very small; and as every injection raises the patient's resistance, the gradually increasing doses that follow are usually as well borne as the first.

While most cases of fall hay fever are due to ragweed pollen, it is advised that a diagnostic test be made before the extract is given hypodermically, since this takes only a few minutes of the doctor's time. The test is a cutaneous one.

Parke, Davis & Co. offer to supply physicians with a booklet on Pollen Extracts. See their advertisement in this issue.

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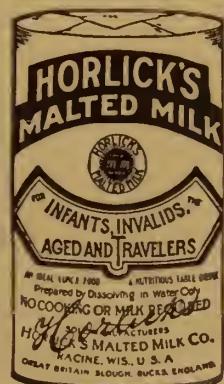
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Acute laryngitis and pharyngitis	127	99	78.0	24	19.0	4	3.1
Acute bronchitis	241	192	80.0	47	19.5	2	0.5
Chronic rhinitis	106	33	31.1	41	38.6	32	30.2
Chronic bronchitis	47	34	72.3	12	25.5	1	2.1
Chronic laryngitis	2	2	100.0	....	....	....	....
Whooping cough	9	8	88.8	1	11.1
Influenza	11	9	81.8	2	18.1
	931	665	71.4	218	23.4	48	5.1

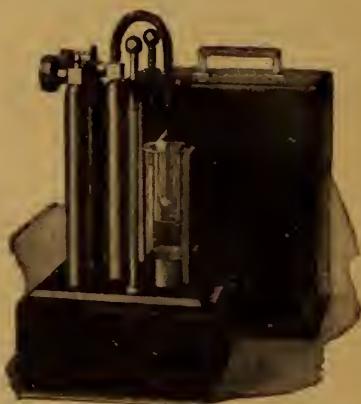
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ORIGINAL ARTICLES

REVIEW OF A SERIES OF SPLENECTOMY CASES.*

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Splenectomy, like Cæsarian section, is a spectacular operation and, also like Cæsarian section, is one of the easiest operations in surgery in uncomplicated cases. It occasionally happens, therefore, that splenectomy is done without proper indications and the statistics concerning the operation are sometimes misleading, particularly with reference to its operative mortality in that the number of cases is diluted by cases in which the spleen is practically normal and the operation done without proper indication. The indications which justify the procedure should be carefully studied before the operation is decided upon.

The indications for splenectomy cover a larger field than our personal experience has met with. Generally speaking, splenectomy is indicated in a large group of cases of pernicious anæmia, splenic anæmia, hæmolytic jaundice, myelogenous leukemia following radium or X-ray treatment, Von Jaksch's disease, thrombo-cytolytic purpura-Kaznelson, malignancy of the spleen, traumatic spleen, wandering spleen, splenomegaly in syphilis and in some cases of splenomegaly in malaria.

Our experience has been limited to three types of cases: Pernicious anæmia, splenic anæmia, and malignant disease of the spleen. In our clinic eight splenectomies have been done in the last five years by the same surgeon. Two have been done for pernicious anæmia, five for splenic anæmia, and one for malignant disease. The operative mortality was twenty-five per cent, which was too high, but was due to bad selection of cases. The two deaths occurred in cases of splenic anæmia; one of the cases was very advanced with atrophic cirrhosis of the liver with frequent and copious hæmatemesis, the other was

an exceedingly large spleen almost completely filling the entire left abdomen, difficult to remove. Operation was followed by marked hyperpyrexia within first twenty-four hours and death ensued.

Splenectomy for diseased conditions should not carry an operative mortality higher than five to ten per cent, according to the types of cases. The operation for splenic anæmia should carry the highest mortality due to the large size of the spleen, adhesions, etc. Splenectomy done for pernicious anæmia and hæmolytic jaundice should carry the lowest mortality and should be almost nil.

"Pernicious anæmia is characterized by progressive degeneration of the red blood cells, permanent change in the method of blood production, marked changes in the spinal cord, achlorhydria, and glossitis."¹ The diagnosis in the early stages is difficult and uncertain. Its etiology is unknown. It will be interesting to note the results of future studies of focal infections and the absorption of toxic material from the large intestine as etiological factors in this disease. Splenectomy up to the present time seems to offer the only means of prolongation of life or temporary amelioration of the symptoms of this disease. The operation, if undertaken, should be done as soon as a diagnosis can be established. Cases in which hæmolysis is most active seem to be the most favorable for improvement. Cure is not to be hoped for; indeed, definite permanent cure would be difficult to prove in view of the uncertainties of early diagnosis. In two splenectomies reported in this series done for pernicious anæmia both were rather advanced; one lived six months following the operation while the other is still alive and at work as a minister after two and one-half years. It may be noted that numerous blood-transfusions were done in conjunction with the splenectomies. There were no operative deaths in these cases. The spleen was approximately double the size of the normal and there were no adhesions, and operative technique was easy.

In this series five splenectomies were done for splenic anæmia. All the cases of splenic anæmia

*Read before the Fifty-first Annual Meeting of the Florida Medical Association at Orlando, May 13-14, 1924.

that presented themselves were splenectomized, consequently the cases were not well selected and there were two operative deaths as above stated. Splenectomy may be said to be an almost certain cure in cases of splenic anaemia provided the operation is done before marked cirrhosis of liver has occurred and care is taken to avoid the cases which are likely to prove to be operative mortalities. The spleen is usually large and very adherent, both of which increase the technical difficulties of the operation and the operative mortality. Cases with marked portal cirrhosis with haematemesis should not be selected, if the surgeon desires to keep his operative mortality low. These large adherent spleens always show pathologically marked fibrous changes with thrombophlebitis and destruction of splenic pulp.

Chaney, quoted by Balfour,² says: "The spleen seems to act as a large lymph node by removing toxic materials and even bacteria from the blood stream. In the conflict between this harmful material and the spleen, a certain amount of spleen pulp is destroyed and is replaced by fibrous tissue. In a disease, such as splenic anaemia, the spleen seems to be called upon to destroy more of the toxic material than is possible, for in these cases there is a very early hepatitis which would seem to indicate that some of the infection had spread to the liver. This process is a slow one, for the disease continues for many years. Finally, so much of the useful splenic pulp is destroyed that the spleen can no longer dispose of the bulk of the infection. The spleen may then be said to be in a state of decompensation, then it becomes a menace by serving as a focus from which the liver may more easily be attacked.

"In splenic anaemia, if the spleen serves a useful purpose up to a certain stage of the disease, there must be an optimal time for splenectomy. A liver functional test may sometime be discovered which, in furnishing information concerning the liver, may serve indirectly as an index to the function of the spleen. A study of the post-operative mortality of these patients indicates that splenectomy for splenic anaemia should not be delayed until well-marked hepatic cirrhosis has occurred."

The following case of splenic anaemia may be of enough interest to report briefly. This case was that of a little Italian child twenty months of age, which had been sick for more than one year, sickness chiefly characterized by gradual weakness and anaemia with enlargement of

spleen. Splenectomy was done. The spleen itself weighed two hundred and eighty-eight grammes, while there was an accessory spleen which weighed fifty-four grammes. The child made an uneventful recovery from the operation and rapidly improved to normal health. Six months after the operation the child contracted influenza and died. There was no apparent liver involvement in this case.

One case of this series was one of malignant disease of the spleen which lends interest because of its rarity as well as the difficulties of diagnosis. For these reasons I feel justified in reporting the case in more detail.

Mr. G. W. O., aged 53 years, admitted to hospital September 10, 1923, for study. Patient's chief complaint was pain in left hypochondriac region, loss of weight and general weakness. History and physical examination by Dr. E. W. Bitzer showed as follows: Family history was negative for tuberculosis, cancer or nervous diseases. Had had pneumonia in 1919, typhoid fever in 1910, pleurisy in 1911 and malaria one year ago. Had never had a surgical operation. Pain in left hypochondriac region radiating slightly to back since May, 1923, was relieved by medicine in August. Two days previous to admission was taken with severe cramps in left hypochondrium, followed by soreness, frequent nausea but no vomiting—spits up food slightly sour, no heartburn or sour stomach, constipated habit for four or five years. Has lost fifteen pounds in three months, palpitation at times, cannot take long breath on account of pain, cannot lie in any position except dorsal on account of pain. Physical examination showed a man six feet one inch in height, weight usual 175 pounds, present weight 160 pounds, general appearance fairly normal, poor color in lips. Teeth, three dead, no pyorrhoea, pupil of right eye fixed, irregular and dilated for twenty-five years due to iritis following ulcer. Left pupil active to light. Chest dull at left base one inch. Respiratory excursion very limited. Voice distant and a few rales present on deep inspiration, no friction rub. Heart negative except suspicion of systolic at apex. Right abdomen was very rigid, especially in upper portion, almost impossible to palpate. Skin is very hypersensitive over left upper quadrant extending up over chest above nipple in front and in axilla, very little tenderness in back. Systolic blood pressure 122, diastolic 75, temperature 100 degrees Fahrenheit at

8 and 102 degrees Fahrenheit at 4 p. m., pulse ranging from 80 to 160, respiration around 20 to 26, 12,000 leukocytes, 83 per cent poly. Tentative diagnosis of pleurisy of left lower chest (dry) with a question of an infection in left upper abdomen.

Cystoscopic examination by Dr. J. C. Vinson showed negative for the urological tract, both kidneys normally functioning: Wassermann negative.

Seven days after admission abdominal rigidity began to rapidly disappear and a large mass could be felt in left hypochondrium which moved on inspiration and was tender. Chest condition improved and finally cleared up. Mass became less apparent and less tender. Cystoscopic examination proving negative, it was decided that mass was an enlarged adherent spleen. Splenectomy was done October 4, 1923. Spleen was found to be quite large, very friable and completely enveloped in adhesions. Haemorrhage was moderate and well controlled. Stomach, duodenum and gall-bladder found negative, but a rather large sized metastatic growth was found in the right lobe of the liver completely penetrating the liver and showing on both surfaces. This was not disturbed. The pathological study by Dr. Herbert Mills showed a spleen weighing 1.087 grammes, multilobular in shape, the lobules varying from pea size to the size of an orange, solid and somewhat soft in consistency. In section the splenic tissue was almost entirely replaced by solid tumors varying from pea size to orange size. On section the tumors are grayish pink in color, moderately soft in consistency and there are areas averaging five mm. in diameter, whitish in color and of softer consistency than the surrounding tissue. Microscopic examination: section characterized by a compact mass of small round cells most of which are somewhat polyhedral in shape. These cells are closely supported by a network of connective tissue. There are many small blood vessels throughout the section. Diagnosis, endothelial sarcoma.

The patient made a good recovery from the operation and was apparently in good health up to about six or eight weeks ago, when metastasis in liver began to grow and patient is at present in poor condition.

The suggestion of Ochsner of a midline incision has been followed in these cases. The technique of Balfour has been followed out for the most part. Special care has been taken not to

injure the stomach, splenic flexure of the colon or the tail of the pancreas. Blood transfusions have been used in all of the pernicious anaemia cases and in two of the splenic anaemia cases with apparent good results. Auto transfusion by use of the blood lost during the operation, as has been suggested by Bryan and others, has not been tried.

CONCLUSIONS

1. Splenectomy offers a chance for prolongation of life and an amelioration of symptoms in early cases of pernicious anaemia.
2. Splenectomy is almost a certain cure in splenic anaemia if done at an optimal time.
3. Splenectomy should not be undertaken in advanced cases of splenic anaemia with hepatic cirrhosis and frequent haematemesis.
4. Splenectomy in malignant diseases of the spleen is indicated provided there are no metastases discoverable by other means except an exploratory operation.

5. The midline incision of Ochsner should always be used to afford an opportunity for careful examination of stomach, gall-bladder and liver.

¹W. J. Mayo: Collected Papers Mayo Clinic, vol. 13, page 617.

²Collected Papers Mayo Clinic, vol. 14, page 62. Quotation from Chaney by Balfour.

DISCUSSION.

Dr. J. E. Boyd, Jacksonville:

I am sorry that my experience in splenectomy cases is rather limited. I am going to merely add to Dr. Helms' cases by citing a case of splenic anaemia, or, as I diagnosed it, "Banti's disease."

Those authorities who make a distinction between Von Jaksch's anaemia and Banti's disease feel that Banti's disease is rather rare in children, and it is for that reason that this particular case presents to me certain interesting features.

This case that I mention is one of a child, who was brought to me first in 1920. At that time she was carefully studied, and a diagnosis of Banti's disease was made. The parents refused operation and she was returned to her home in Georgia. At that time the child had complained of general weakness, vomiting of blood and distention in the abdomen. That was in June, 1920. In November, 1920, she began with a series of hemorrhages, and was returned to me in January of 1921. At this time she was accepted for operation. She received two blood transfusions,

but these did not do much for her blood. She was then operated upon and again transfused with blood. There were no difficulties. I am like Dr. Helms, that unless there are a lot of adhesions the operation is a rather simple one.

The thing that most interested me about this case was that the blood picture did not pick up as I felt it possibly should do. The child was transfused at the time she was operated, and one or two days afterward her blood study by Dr. McIver showed only a small increase in the reds, practically no effect on the whites, and only about possibly two or three per cent increase in the hemoglobin. The child went home.

Up to the time the child was operated on, she had been having hemorrhages at the rate of about four a year. In January, just one year practically from the above operation, she hemorrhaged again—a very large hemorrhage.

The child was brought back and we did two or three transfusions. At that time the reds were about the same as they had been before the operation, but the hemoglobin had gone up to 58 per cent, and the whites had made an increase. She was, as I have said, transfused, and the mother was told that she could take the child back home as there was nothing further to do about the matter at that time.

An aunt of the child, who did not think the child was being properly treated, then took possession of the case. She got some patent medicine of some sort and proceeded to care for the child. Six months after that she came to my office and pronounced the child entirely cured, by the medicine she, the aunt, had given her.

I had an opportunity to see this child again three or four days ago. The parents stated that there had been no further hemorrhages—that she had had no hemorrhages for about two years. She is now apparently in good health; however, we did not have the chance to study it out as we would like to have done as the parents would not permit her to remain here.

This is a probable cure, but we cannot state that it is a permanent cure. We can simply say that she is apparently in good health, going to school, and playing with other children. This is what we state, clinically, as a probable cure.

Dr. J. Knox Simpson, Jacksonville:

I have enjoyed Dr. Helms' paper very much,

and I think this subject of splenectomy is a most important one.

I remember when I was in medical school there was a joke going around that one of the young men in a quiz was asked by the quiz-master to give the functions of the spleen. He hesitated for some time, and then said that he knew what they were, but had forgotten them. The quiz-master stated that it certainly was too bad that the only man who had ever known the functions of the spleen had forgotten them.

There has been a good deal of work done in recent years regarding the functions of the spleen, most of which was accomplished really through elimination, removal of the spleen, and study of the patient before and after the splenectomy. One subject that has been particularly interesting to me is that of splenectomy for purpura hemorrhagica, which was based on the theory that the spleen destroyed blood platelets at a more rapid rate than they could be manufactured, prolonging the bleeding time and lessening the clotting so that hemorrhages from the mucous membranes and under the skin occurred. Upon the theory that the spleen was the agent which destroyed the blood platelets, it has been removed in a good many cases, with prompt cessation of the disease.

Dr. John S. Helms, Tampa (concluding):

I have only a very few words to add. I want to express my appreciation for Dr. Simpson having referred to the recent work that has been done with reference to purpura hemorrhagica. I mentioned this in my paper, but I did not call it by that title; however, I used the term, "thrombo-cytolytic purpura."

There was a very interesting paper read before the Southern Surgical Association in December on this subject, which reported a case, and went over the scientific side of the cause of this disease, and pointed out splenectomy as the remedy for same.

I want to express my appreciation for Dr. Horsley having gone over the mechanics of the hemorrhages.

This is a very important subject as it describes the mechanical changes in cases where the hemorrhages are discontinued for a time after splenectomy and are later repeated.

HYDATIDIFORM MOLE AND REPORT OF CASE.*

G. H. EDWARDS, M.D.,

Attending Gynecologist at Orange General Hos-
pital, Orlando, Florida.

Hydatidiform mole, also known as cystic degeneration of the chorion, vesicular mole and myxoma chorii, one of the complications of pregnancy, has been considered, until more recently, a very rare condition. Madam Boivin, in 1827, reported one case in 20,000 pregnancies; Edgar, in 1904, four in 15,000 cases; Possi, none in 6,000; Lynch, in 1921, one in 3,500; Hirsch, one in 4,000, and many others gave similar reports. In over 1,000 tabulated cases of pregnancy and with possibly 200 abortions and miscarriages unrecorded, I have seen but one case and that one but recently.

On the other hand, Arthur Meyer, carefully examining the expelled mass in 2,089 cases of abortion, found eight cases of chorionic degeneration, that is one in 261; and Velasco of Manila, 1921, reports finding an average of one in 204 cases of pregnancy admitted to the Philippine General Hospital. But even so it is a somewhat rare condition.

I suppose the reason Meyer and Velasco found so many was because they were looking especially for it and noted many cases which were in the early or almost incipient stage, in which no invasion of the uterine wall had taken place, the cysts were very small and just enough disturbance of circulation had occurred to produce a complete abortion or miscarriage. I do not doubt careful examination with the use of the microscope might reveal many more.

Possibly this might be the cause of the many innocent abortions with which we have to deal and which terminate without incident, that is, those in which our patients tell us a mass was passed and thrown away, and we find on examination a soft patulous cervix but no signs of placental tissue.

The condition is characterized by the conversion of the extremities of the chorionic villi into transparent vesicles containing a clear slightly sticky fluid. These bodies vary in size from ones so small they can scarcely be seen up to ones large as medium-sized cherries and, being connected together by their pedicules, they give very

much the appearance of a bunch of grapes. The formation usually involves the entire periphery of the membrane, but is said at times to be limited to small portions of the chorion, and this later may be one reason that so few have been recognized.

ETIOLOGY.

The exciting cause of this degeneration of the chorionic villi has not been definitely decided. Virchow states that it is due to endometritis; others give syphilis and uterine fibroids as a predisposing cause. Williams believes that the primary process originates in the ovum from the fact that in rare instances of twin pregnancy one ovum may be perfectly normal while the other presents a hydatidiform mole.

The diagnosis is rarely made before some characteristic grape-like vesicles have appeared in the vaginal discharge or until abortion or miscarriage has taken place. It must be suspected, however, when the uterus enlarges more rapidly than a normal pregnancy should. This, however, is also the case with hydranmios. The rapidly enlarging uterus, coupled with a recurrent hemorrhage rather thin in character, should arouse one's suspicions.

Despite its rarity hydatidiform mole should be of great interest to us and should be held in mind in all cases of innocent abortion and miscarriage. In 1917 Polloson and Violet reported 203 out of 433 cases of chorio-epithelioma, that is 45 per cent, as having been preceded by hydatidiform mole. In 1921 Palmer Findley reported 500 cases of which 31.4 per cent were preceded by hydatidiform mole.

In view of the work of Meyer, who found many early abortions to have chorionic degeneration, these percentages given are probably high when considering both early and late abortions and miscarriages. However, it seems that the early abortions empty out more completely than late ones, and it is those late cases where the villi have already invaded the wall of the uterus that are more prone to be followed by the malignant chorio-epithelioma, and it is this condition that we should be especially on the watch for.

When the diagnosis of hydatidiform mole is made, the uterus should be at once emptied of its contents. Care and time should be devoted to thorough dilatation of the cervix. Williams says: "Contents should be removed first by placental forceps or sponge sticks as far as possible and the rest removed by digital curettage."

*Read before the Fifty-first Annual Meeting of the Florida Medical Association, at Orlando May 13-14, 1924.

Theoretically that last suggestion is good, but in my case it was impossible to do it thoroughly that way, and I imagine it is so in most cases. If there is such danger of a malignant growth following the mole, the removal should be complete and thorough and that in many cases I believe can be accomplished only by the sharp curette. The operator, realizing the more than ordinary danger of perforation of the uterus and proceeding accordingly with caution, should have few if any accidents, and if perforation then occurred in the hands of a careful man it would indicate that the uterine wall was so tragically invaded that a malignant condition would almost positively ensue or was already present; therefore the uterus would be removed at once, as it should be, to save such a complication. Schumann objects to this, the usual method, and advocates the following procedure, which I quote:

"Upon the diagnosis of hydatidiform mole being established, no vaginal work is done whatever. Laparotomy is performed, the uterus isolated by gauze packs, and an abdominal hysterotomy is done, the mole being inspected *in situ*. Should it be distinctly limited in attachment to the decidua, and show none of the little hemorrhagic areas in the uterine muscularis, which bespeak invasion of the uterine wall, the tumor may be shelled out and the uterine wound closed after the cavum has been disinfected with iodine. Should areas of invasion of uterine muscle be present, however, and this is true in the majority of cases, no attempts are made at shelling out the tumor, but an immediate supravaginal hysterectomy is performed, the only exception to this plan being in the case of a primipara desirous of family to whom the situation has been carefully explained and who is willing to assume the risks of either curettage or abdominal hysterotomy with removal of the mole by this route."

Williams, however, refers to this method of treatment by Schumann and says: "I consider his recommendation unduly radical, and feel sure that it will lead to the unnecessary sacrifice of many uteri. At the same time I should not disapprove of routine hysterectomy whenever the condition develops in women at the end of the period of sexual activity."

REPORT OF CASE.

Mrs. McF., age 24, married sixteen months, came to me the latter part of December, 1923, with the statement that she had missed three

menstrual periods and that it was now about time for her to be unwell again, if she followed her usual schedule. She gave a history of only slight discomfort at menstruation and of unusual regularity, that is always beginning on the morning of the 28th day. The last period in September had been perfectly normal. She had passed through a six weeks' period of mild morning nausea and at present was feeling fine. She left a specimen of urine which contained a slight trace of albumen, and was advised to come back at a more convenient time for an examination and measurements. Three weeks later she came back, the urine had still a slight trace of albumen, was acid, no casts and but few pus cells. The pelvic measurements were good. The uterus could be palpated above the symphysis. It was normally elastic, but cervix seemed to be unusually soft. The next day she phoned me that during the night she passed a small blood clot the size of a pecan. She had no discomfort at all. I advised rest for a day or so, thinking my manipulations of the cervix might have produced it. Some ten days or two weeks later she again reported that she had taken no rest as I had advised, but kept on at her usual occupation as stenographer with no sign of trouble until that morning when she again passed a small blood clot with no discomfort. I again advised rest, which was accepted, and because the urine was somewhat concentrated with the same trace of albumen and as patient was constipated, I ordered cream of tartar Bid. with happy results. A week later she phoned that during the night she began to have a thin bloody vaginal discharge and that her back was feeling uncomfortable. Three hours later when I saw her she was having uterine contractions every ten minutes with a slight bloody mucopurulent discharge. The fundus of uterus was one inch below navel and was very firm. With the uterine contractions the presenting membrane protruded well into the very soft cervix which admitted two fingers. Considering it an inevitable miscarriage, I gave her a hypodermic H. M. C. No. 1. Some four hours later I again visited the patient and was presented with a mass similar to a large bunch of green mountain grapes. No foetus was observed. There was little hemorrhage, no fever and nothing protruding from the cervix. Six hours later she had a severe chill and passed considerable blood and her temperature mounted to 104. Curetttement soon after conducted with

great care removed a teacup full of placental tissue and small cysts. This mass was rather firmly attached to the anterior and upper portion of the uterus. The temperature dropped, hemorrhage ceased and recovery was uneventful. Seen two weeks ago the patient had a normally placed and normal sized uterus and reported having had two normal menstrual periods. The urine contained no albumen.

In looking up typical symptomatology, I note that this case departs from type in several respects:

1. No profuse or protracted hemorrhage.
2. The uterus did not enlarge with undue rapidity, nor was it larger than it should have been for time of pregnancy.
3. The cervix was unusually soft instead of unusually firm, as stated by Edgar.
4. No unusual nausea, emaciation or discomfort was experienced.
5. No cysts observed passed anticipating the outcome.
6. I did not recognize the peculiar doughy feeling of the uterus which is said to be somewhat characteristic of the condition.

I surmise from these departures from type that this is a case of a benign hydatidiform mole, that is, one following which no chori-epithelioma will develop. However, the young lady is being observed bi-monthly.

BIBLIOGRAPHY.

- J. C. Edgar—*Obst.*, Blakiston, 1914.
 F. W. Lynch—*Pelvic Neoplasm*, Appleton, 1923.
 J. W. Williams—*Obst.*, Appleton, 1923.
 A. Meyer—*Am. J. Obst.*, 1918.
 F. J. Velasco—*J. Phil. Isl. Med. Soc.*, 1921.
 Pollossen and Violet—*Am. Gyne.*, 1913.
 P. Findly—*Am. J. Obst.*, 1917.
 E. A. Schumann—*Am. J. Obst. and Gyne.*, 1922.

DISCUSSION.

Dr. F. J. Waas, Jacksonville:

These cases are rather odd and interesting. I have one which is in the hospital at the present time. But, first, I have some pictures that may be of interest while we are on the subject, and will pass them around.

The case that I have has been under my observation off and on for about five months. She had missed two menstrual periods without any evidence of hemorrhage. The third month she came to the office to see me on account of some bleeding. I made an examination but did not find anything interesting, and sent her home. But gave her some little sedative as we usually do in cases of that kind. At the end of another month she returned with some signs of more

bleeding. Made another examination, and still there was nothing seen. I then suspected a *placenta prævia*. At the end of the fifth month, last week, her mother phoned me that she had a very profuse hemorrhage. I immediately went to see her and made another examination. There was no dilatation; in fact, nothing to suggest a *placenta prævia*.

I sent her to the hospital for observation. There were signs of bleeding off and on all during that day. The next morning about 5:30 a. m. she had a profuse hemorrhage, with very severe pain and expelled this malignant mole—expelled it before I could reach her. I recognized this condition, and then there was the question of what to do, and advisability of curettage. I made another examination and found the uterus was apparently empty, and about the size of a two and a half months' pregnant uterus. There was not much that we could do for her at that time, she was markedly exsanguinated, and I thought it better to wait until she had more thoroughly reacted.

There is just one other point that might be of interest in this case, and that is the marital history. I found out that they were third cousins, and I just wondered if that might not have some bearing on this mole.

On examination by the pathologist, this mole showed no chorio-epitheliomatous change. However, we are thinking of doing a hysterectomy or a hysterotomy some time this week; that is, if the findings still warrant it.

Dr. Maurice Heck, DeLand:

This is a very interesting case. I had one, a little over a year ago, in a child thirteen years old. The mother brought her to me, stating that she had had some bleeding. I told her that I could not tell her anything without making an examination, but the girl was too shy for that and they went away. Soon after that the brother came back and said that they had been to a chiropractor, who had given her treatments and the bleeding had stopped.

The next night about midnight they called me again, to come about twenty-five miles up the country. Of course, knowing the history of the case, I prepared for what might happen, thinking of the possibility of an incomplete abortion. She had looked pretty anemic when in the office. When I got there she looked mighty pale—was well-nigh exsanguinated, and I noticed that the bedding was pretty well saturated with blood.

On examination that great black mass presented. I recognized it at once, although it was the first one that I had ever seen; I had heard something of it in my earlier days. Without making any further examination I prepared my instruments, put her across a trunk, and got busy. I took a dull curette and cleaned out the uterus. Thinking of the possibility of infection in conditions of this kind, I did not make much of an examination afterward. If I had, I might have found something interesting.

I then explained to the family as well as possible that about 50 per cent of these cases were supposed to develop malignancy, and that if the chorio-epithelium should develop it would probably begin to show up in a few weeks. Told the mother that I would like to keep her under observation and for her to bring the child back to my office in about two weeks.

Four or five days later they called for me again. At this time the discharge had cleared up pretty well, was rather thin, blood-tinged and watery. No more of these grape-like masses had appeared. Had evidently cleared up pretty well.

About a week later I saw her again, and this time noticed a mass about the size of an orange, rather smooth, oval-shaped and lying to the right of the uterus, probably the ovary. On the left side there was a mass about half that size. In view of the circumstances, I advised that she go to the hospital at once and have an operation. But the mother said she would have to go home and consult father. I heard nothing more of the case, and began to get worried, so I sent word up there. One of the neighbors sent word back that the girl was all right.

Some time later I met her brother and learned from him that they had gone to another doctor right after their visit to me, and that he had told them it was all foolishness, that no operation was necessary.

Undoubtedly the masses found at the last examination were there before this condition existed, and were simply cystic ovaries or possibly a fibroid growth, and I might have found this out on an earlier examination. The brother, thirty-five years old, had taken treatment with 606 and had also been tubercular. If either of these conditions had any bearing on the etiology of the hydatidiform mole, the condition would be of interest.

Dr. G. H. Edwards, Orlando (concluding):

In closing I would like to say that the pictures submitted by Dr. Waas show a most excellent resemblance to what I had and had hoped to preserve.

I believe that if we would all examine very carefully the expelled masses in our so-called miscarriages and abortions, we might find that cases of hydatidiform mole are not so extremely rare as they are supposed to be.

THE POST-OPERATIVE TREATMENT OF PEPTIC ULCER.*

HARRY A. PEYTON, M.D.,

Jacksonville, Fla.

Rest, general or local, following most surgical operations is a fundamental principle which is well recognized. That this is especially to be desired following operations for peptic ulcer is self-evident. It is the author's purpose to outline a plan of treatment founded on certain gastric physiological facts, which have been found from practical experience to fulfill this requirement of rest. While applicable to any type of operation for peptic ulcer, it is of particular value following those procedures where, for various reasons, the ulcer must be left in situ.

Many of the treatments for peptic ulcer by non-operative methods are empirical, and fail to observe certain facts of gastric physiology, which have been established in recent years. As an example we may consider the subject of pain associated with ulcer. It was, and is still, commonly thought that high degrees of acidity are responsible for this. When we are confronted with the fact that free hydrochloric acid values in ulcer are often normal, or even below normal, this theory becomes untenable. Thus in 500 cases of gastric ulcer Smithies¹ found but 30 per cent above .25 per cent H. C. L.; in 45 per cent a normal range, and in 25 per cent the acidity was actually reduced. Quoting Smithies again, Pawlow, Rehfus, Carlson, Hertz, and Hamburger have shown that pain is not present when acidity is highest, and that the administration of hydrochloric acid fails to increase the pain; furthermore, that the pain is relieved equally well by means other than alkalies.

Regarding the mechanical factors in digestion, it has been demonstrated that:

*Read before the Fifty-first Annual Meeting of the Florida Medical Association, at Orlando May 13-14, 1924.

1. The empty stomach is tonically contracted.
2. Hunger is accompanied by rhythmic contractions of this organ.
3. Peristalsis persists as long as food is in the stomach.
4. Intra-gastric tension is regulated by the rate and intensity of peristaltic contractions and the proper functioning of the cardiac and pyloric sphincters.

It would seem reasonable to conclude from the foregoing established facts that the pain associated with ulcer is caused largely by the motility of the stomach, and not by any dysfunction relative to its chemical contents. Frick² observes that "it has been fairly conclusively proved that it is not caused by irritation of the exposed nerve endings in the ulcer by the acid gastric juice, but rather by the effect of the peristaltic contractions, intra-gastric tension, and pyloric spasm on the infected ulcer and the inflamed surrounding tissues."

Considering the effects of food on gastric digestion, Smithies concludes:

1. Water and salts cause limited gastric secretion and feeble peristalsis.

Carbohydrate foods leave the stomach quickly, due to their failure to unite with hydrochloric acid.

3. Retardation of carbohydrates in the stomach is marked if mixed with alkalies.

4. Protein food leaves the stomach more slowly than carbohydrates, and quotes Cannon as stating that at the end of one-half hour, eight times as much carbohydrates as protein has left the stomach.

5. Carbohydrates begin to leave the stomach immediately, while proteins remain one to three hours.

6. Fats remain longest in the stomach, but excite only feeble peristalsis.

7. Food delay in antrum and pylorus, the seat of 60 per cent of gastric ulcers, adds additional injury to the local lesion by reason of increased and prolonged activity of the stomach.

I think it fair to presume that it is possible to minimize the activity of the stomach and attain the end of comparative rest which is so much to be desired by the proper application of these principles of gastric physiology.

With the conviction that these principles are sound and logical, the following modification of Smithies' plan of treatment has been adopted in

the Riverside Hospital for the post-operative management of peptic ulcer. The patient is given sufficient morphia to control the pain incident to the operation. Water and other liquids are not given by mouth for the first forty-eight hours. During this period, the patient is given paraffin to chew, as this materially lessens thirst and tends to cleanse the mouth. Beginning the day following the operation nutritive enemas containing alcohol (95 per cent), one-half ounce, glucose, one ounce, normal sodium chloride solution, eight ounces, are started. This is given by rectal drip, four times in the twenty-four hours. If there is rectal pain or discomfort, as a result of the enema, tincture of opium is added. By this means the patient is given 300 to 600 calories during the twenty-four hours. At the end of forty-eight hours, mouth feedings are begun, the nourishment being given liquid and warm at frequent intervals. For this purpose, thin cereal gruels and creamed soups are chosen and given in four-ounce quantities at two-hour intervals. At the end of two weeks, the diet is increased by adding easily digested foods; for example, baked potato, crackers, toast, cereals with cream and sugar, milk, which has been boiled or peptonized, ice cream, etc. A gradual return to full diet, with certain reservations, is allowed at the end of six weeks. No drugs are given other than the morphia. The bowels are regulated by means of enemas. The nutritive enemas are discontinued at the end of the first week.

Since the adoption of this regime, there have been treated, by this method, two patients with acute perforating ulcer of the duodenum on whom simple closure of the perforation was done, one patient with chronic duodenal ulcer, treated by posterior gastro-jejunostomy, and one with pyloric ulcer on whom a resection of pylorus with a Polya type of operation was performed. We have been very favorably impressed with the freedom from pain, eructations, gastric distention and the smooth convalescence these patients have experienced. In no case has alkali been administered, and a careful follow-up record in each case has shown them to be comparatively free from discomfort since their return home.

¹Smithies, Frank—Observations upon the nature, diagnosis and clinical management of gastric ulcer with suggestions for a rational regimen of treatment. *A. M. Jour. Med. Sci.*, 1923, 166-781.

²Frick, Anders—Medical Treatment of Peptic Ulcer Without Alkalies. *J. A. M. A.*, 1924, 82-595.

DISCUSSION.

Dr. J. B. Wallace, Tampa:

My experience with the immediate post-operative treatment of peptic ulcer is so limited that I hardly feel myself capable of discussing that feature of it.

I think that most of us would be disposed to agree with the author in his principles as brought out in this paper.

The point that I should like to emphasize in connection with this paper as to the subsequent care and treatment of these cases after they get out of the hospital, is this: The importance of the maintenance of an adequate nutrition on the part of the patient, and in order to accomplish this we must have a suitable diet for that class of cases. It has impressed me for a good many years that in the care of these cases that this is a very important point.

Dr. Marvin-Smith, Orlando:

I wish to express my appreciation for the paper that Dr. Peyton has just read. It shows thought, study and experience.

There is one thing which may seem simple and of little value to most of you, but I do wish to emphasize it, and it is this:

In reference to carbohydrates, all of us know that starches pass through five processes of digestion. We also know that after cereal introduction the entire digestive tract is embarrassed. We know that starches are not well handled as a rule. Therefore, I do want to emphasize one single point in the giving of cereal gruels. Cereal gruels are all right, but I want to bring out this one little point. If you will have your cereals first toasted, then prepare your gruels, you will carry your carbohydrates through the first two stages of digestion. Therefore, by that means you will come nearer getting along without the discomfort of gas and gaseous distention and that sort of thing, than if you give the cereal gruels plain and untoasted.

As the Doctor has stated in his paper, rest is the thing that is most important in the care of these cases. If it is rest that we are going to accomplish, then let us accomplish it in every conceivable way, and using toasted cereals will very much aid the good results that you will get.

I do not quite understand the statement that Dr. Peyton made relative to salt—whether he made the statement that salt does not increase the peristalsis or whether it does, so I am going to say what I wish to say concerning that point.

When salt reaches the stomach it immediately splits up, and the sodium and chlorine separate, producing hydrochloric acid. Any X-ray man in this room knows full well that hypermotility is increased by an increase in hydrochloric acid. Therefore I would warn any and every man against the promiscuous use of salt or salty gruels in the handling of post-operative conditions of the stomach. Rest, as the Doctor has said, is the thing greatly to be desired. It must be accomplished, therefore let us all be very cautious about giving salt. When we produce an increase in hydrochloric acid we are causing an increase in hypermotility, or the very thing we would overcome.

Dr. Harry A. Peyton, Jacksonville (concluding):

In regard to Dr. Wallace's statement that these patients should be watched over a sufficient length of time or a prolonged period of time, I think, we will all agree. It behooves us to watch these patients over a long period of time and to regulate them accordingly.

In regard to Dr. Marvin-Smith's mention of eructation: In this plan of treatment we have not had eructation or vomiting. I do not think for an instant that we have reached perfect success, but we have been very fortunate in not having eructation and vomiting. In such cases I should certainly not hesitate to resort to gastric lavage to overcome this disagreeable feature.

The statement made with regard to salt was this: That water and salt caused but feeble peristalsis, and if by taking salt as such into the stomach you increase hydrochloric acid in the stomach it is absolutely new physiology to me.

PRE-ECLAMPTIC TOXEMIA OF PREGNANCY COMPLICATED BY MONSTROSITY, WITH REPORT OF CASE.*

GEORGE FREDERICK OETJEN, M.D.,
Jacksonville, Fla.

It is always difficult, and sometimes impossible, by the ordinary clinical examination to differentiate between the nephritic and the pre-eclamptic varieties of toxemias of pregnancy. The pre-eclamptic toxemia is said to occur more frequently than the nephritic toxemia, and the prognosis is usually better in the former. Fortunately, the

*Read before a meeting of the Staff of St. Luke's Hospital, Jacksonville, May 8, 1924.

difficulty in diagnosis is more important from the scientific than from a practical point of view, as the treatment employed is identical for both cases.

In some instances the etiology may be the same for both varieties. Many theories have been mentioned as the causes of the toxemias of pregnancy. Of late, the general consensus of opinion is that the toxemias have their origin in chronic foci of infection, namely the teeth, tonsils, sinuses, etc.

Talbot states that emboli of bacteria are discharged into the maternal blood stream, time and again. From these foci in consequence of their low virulence have but a gradual effect upon the various organs through which they circulate. They feed by preference upon the carbohydrates, and in consequence are a drain upon the glycogen content of the liver. There is a rapid demand for carbohydrates for the growing fetus in pregnancy, and this forms an added source of depletion of the glycogen content of the liver, and leads to the symptoms which we see in the pre-eclamptic toxemia. Instances are on record where the extraction of an abscessed tooth has relieved such a condition.

The maternal blood charged with these bacterial emboli coming in contact with the placenta finds a most fertile field for further development, since this new and developing tissue. As the micro-organisms enter the placental circulation, Nature attempts to limit the process by a protective thrombosis, which results in the red infarcts so often seen in placentas. With their circulation cut off in consequence of the thrombosis these in time become the white infarcts, practically dead spaces in the placenta, and may be the cause of early abortion.

The emboli of bacteria, coursing through the other organs, cause destructive changes that require an added stimulation of the sympathetic nervous system to overcome them. They interfere with elimination, and a compensating increase in blood pressure is excited to overcome this deficiency. This is one of Nature's protective processes to increase elimination, as it has a reserve force for this purpose, and all goes well as long as the increase in blood pressure results in satisfactory elimination. With the retention of waste products and of water there is an increase in the bulk of the blood stream, which necessitates a dilatation of the whole vascular system.

Finally, when the increasing dilatation from within the blood vessels is greater than the contracting power of the muscular structure surrounding the arterioles, edema or passage of the excess fluid into the tissues results in the dependent parts of the body. With the increase in blood pressure, albumin shows in the urine, and indication actually that the toxemia has been existing for some time. As the condition continues, the strain upon the sympathetic nervous system finally becomes too great, the arterioles dilate, and edema of the tissues results. The action of the toxins of the bacteria upon the sympathetic nervous system causes intestinal paresis. The bacteria circulating in the liver feed by preference upon its glycogen contents, thereby creating a carbohydrate deficiency, and this gives practically the full complex of pre-eclamptic toxemia. With a system so surcharged with destructive changes, only a slight added stimulus such as a removal to a hospital, a vaginal examination, or beginning treatment is required to incite a convulsion. Eclampsia, accordingly, may be not the result of a single infection, but the final failure on the part of the system to combat repeated discharges of infective organisms circulating in the maternal blood stream.

REPORT OF A CASE.

D. P., age 25, white female, was referred by Dr. Graham E. Henson. Family history and past medical history irrelevant except for two sisters, one having had eclampsia twice, and the other once. Cystitis four years ago, and at times since.

Patient complained of persistent headache, nervousness and swelling of the feet and legs. She stated that for the past two weeks she had been very nervous, and that her sleep was often disturbed by dreams. A feeling of uneasiness would come over her and she would be in a state of tremor for hours, at times she had hallucinations. Patient noticed that she had considerable swelling of the feet and legs and tired very easily on slightest exertion. She was troubled with frequency and nocturia six to eight times. Her menses began at the age of 13. The flow was free, regular and not painful. Duration two days. For the past few years the flow has been free but somewhat irregular and painful. Duration three days. The last catamenia was June 11, 1923, lasted one day and was very painful. Patient has been married one year. Husband living and well. Patient considered herself about seven months pregnant.

Examination showed a fairly well developed and nourished white female, with considerable edema of the feet and legs. Blood pressure, 180 systolic—130 diastolic; pulse, 96; respiration, 20; temperature, 98 3-5. Patient complained of slight dimness of vision and partial deafness in both ears. Examination of eyes and ears was negative. Dentition good. Tonsils were hypertrophied and cryptic. The breasts were prominent and full. The respiratory excursion was somewhat limited, due to the high position of the uterus. The heart and lungs were negative. The abdomen was very prominent, and was about three inches higher than the costal margin. The abdominal walls were tense, and palpation of the fetus was very difficult, and the position could not be fully determined. Feeble fetal movements could be felt, but the fetal heart sounds and placental souffle could not be heard. No abnormal masses were palpated. There was some tenderness to palpation over the bladder. The vaginal examination was negative. The extremities were well developed, and the feet and legs showed considerable edema.

The laboratory report showed the following:

W. B. C., 9,400 per cu. mm.

R. B. C., 4,104,000 per cu. mm.

Hemoglobin, estimated, 80.

Differential count: Polys, 65.

Small lymphocytes, 28.

Large lymphocytes, 6.

Eosinophiles, 1.

The urine was yellow, cloudy. Sp. gr. 1,010. Acid. Albumin, strongly positive. Sugar, negative. Indican, positive. Acetone and diacetic acid, negative. A few hyaline casts and numerous pus cells were found. Quantitative test for albumin showed slightly over 1 gram of albumin per liter. The phenosulphonphthalein test showed 65 per cent elimination. Nitrogen ammonia and urea coefficients were not determined. After measuring the intake and output of all fluids for 24 hours, the output was found to be diminished.

Treatment: The blood pressure was recorded every three hours when the patient was awake. Patient was put on strict nephritic diet, except milk was allowed. Hot packs were given every eight hours for fifteen to twenty minutes. Mg. sulph. one ounce was given every morning for first three days, then P. R. No. 3 nephritis tablets

were given every four hours in capsules. Five grains of veronal was given at night for insomnia when needed.

Patient began to show immediate improvement under this treatment. The blood pressure was reduced and the edema subsided. The quantitative albumin test showed a decrease in the amount of albumin per liter, and the patient's whole general condition seemed better. The urine output was greater, and the P. S. P. test showed 70 per cent. elimination. After a week's time the patient's condition was so much improved that she was permitted to go home in an ambulance. The nephritis tablets were discontinued.

About twelve hours after leaving the hospital, the membranes ruptured, and patient went into labor. She was sent back to the hospital immediately. An examination revealed a foot presenting, and no pulsations could be felt on palpation of the cord. Dr. Norris saw patient with me at this time. The foot was pulled down to act as a wedge and about two hours later a still-born fetus (an amencephalus, with a bifid spine) was born spontaneously. The fetus was apparently one of about seven months' gestation. It weighed five pounds, measured nine and one-half inches in length, and across the shoulders measured five inches. All the bones of the vault of the skull were missing, and the brain was rudimentary and could be seen through its coverings. The spine was bifid in its entirety, and the cord could be seen in the groove between the bifid processes.

Two weeks before this patient was sent to the hospital she was apparently normal in every respect, except for a few pus cells in the urine. With the history of a chronic cystitis, it seems most likely that her toxemia was due to the focal infection somewhere in the urinary tract, and it is also possible that the monstrosity was due to the same focal infection. However, the fact that two sisters had had eclampsia would lead one to think of some hereditary condition. There was no history of any other monstrosities in the family on either side. Whether or not nephritis was of any value in this case I do not know, but ten days after the abortion the urine was entirely free of albumin and casts, and the urine has remained negative for albumin up to the present time.

TEMPORARY HYPERSTROPHY OF THE PITUITARY GLAND AT PUBERTY WITH SYMPTOMS OF CEREBRAL PRESSURE.*

GILBERT OSINCUP, M. D.,
Orlando, Fla.

There being so much discussion at present as to the inter-relationship of the various glands of internal secretion, it seems to me that the case presented here has features which may help to clear the situation somewhat. According to Cushing, "Adolescence, pregnancy, and the climacteric doubtless represent periods of life in which occur the most striking and abrupt of all the physiological alterations to which mankind is heir. In some animals there are other more notably seasonal states, such as hibernation, which can be placed in the same category. These conditions are often coupled with more or less definite clinical manifestations on the part of the ductless gland series—changes which, for obvious reasons, have been recognized in the sexual glands and thyroid, but which have been largely unobserved in the case of the other glands, owing to their inaccessible position.

"This is particularly true of the hypophysis, for though experimentalists have shown that the interrelation between the interstitial cells of the ovary and the pituitary body is a most intimate one—far more intimate than with the thyroid, for example—the utter inaccessibility of the structure, which has precluded investigation by prescribed clinical methods, as well as the unfamiliarity with the symptoms brought about by its states of over- or under-activity, has left the whole subject in obscurity.

Puberty.—The possibility that, coincident with the adolescent period, there may be functional alterations in the hypophysis has not, so far as I am aware, been clinically suggested or histologically demonstrated. However, there are reasons for believing that at this age demonstrable changes occur which, in association with a primarily unstable gland, may so upset the biochemical processes of the body that they cross the boundary from a purely physiological state to one which borders on the pathological.

"The rapid increase in stature which occurs during the adolescent period in all likelihood

due to an hypophyseal hyperplasia. The same factor may well account for the occasional spontaneous glycosurias characterizing this period of life; and it is not improbable that during this epoch the tolerance for carbohydrates is actually low in all individuals, as is possibly true also in pregnancy, in which state a transient physiological hyperpituitarism is more clearly demonstrable, as we shall see.

"It is conceivable, furthermore, that the acquirement of secondary sexual characteristics, which Tandler, Hanes and others have definitely shown to be related to the interstitial cells of Leydig in the testes, may in some way be dependent upon a primary hypophyseal stimulus—a conjecture which would seem to receive some support from the bizarre cases of early sexual development with certain types of hypophyseal or pineal tumor. The reverse condition—namely, failure to acquire secondary sexual characteristics, stunting of growth and a high rather than a low tolerance for sugars—due to hypophyseal insufficiency is easily produced by partial experimental extirpation in pre-adolescent animals."

In the case presented here it would seem that the symptoms are due to a stimulation of the hypophysis by the newly awakened ovarian secretion rather than a stimulation of the ovary by the secretion of the hypophysis.

Mary E. Lapham, in her article, "Preparations for Puberty," in the *Medical Woman's Journal*, 1923, says: "The posterior lobe of the pituitary influences the retention of water, development and functional force of the sex gland and the utilization of fats and carbohydrates. When there is insufficiency of the posterior pituitary the ovaries do not develop. Fat is deposited across the lower abdomen and the upper part of the thighs. The sex urge is lacking, the temperament is apathetic, and the tolerance for carbohydrates is greatly increased. This hypogenitalism with obesity may result in a difficult or impossible puberty. If the posterior pituitary, the one chiefly effected in its co-ordinating functions with the urogenital centers in the third ventricle, the hypogenitalism may be associated with an increased excretion of urine, resulting in enuresis, polyuria, and diabetes and insipidus. In other cases, insufficiency of the posterior pituitary causes relaxation of the nasopharyngeal circulation, establishing a tendency to colds and troubles in the sphenoid sinus."

*Read before the Fifty-first Annual Meeting of the Florida Medical Association, at Orlando, May 13-14, 1924.

Many cases of pituitary epilepsy are reported in the literature on this subject, but none of them as severe as that encountered in this case and none with the same periodicity.

CASE REPORT.

Female, age thirteen and one-half years. Family history negative, except all members are large in stature. Past history negative, except usual diseases of childhood, none of which were of unusual severity. Weight at birth, eight pounds. Menses began at twelve years and three months, and about this time the mother noticed unusually rapid growth and a tendency towards obesity. The child's mentality has always been sluggish, having advanced only as far as the fifth grade. Periods were regular, twenty-eight-day type.

In August, 1922, nine months after menses began, patient had first epileptiform attack. The day preceding this attack the patient complained of headache and seemed to be enormously hungry.

The next morning the child arose, apparently dazed and did not seem to know where she was; face flushed, unable to talk, except in monosyllables and after great effort. Had no convulsions, frothing at mouth or biting of tongue or lips. Patient was put to bed where she remained for about five days with her condition unchanged. No desire for food, involuntary defecation and urination. Recovery took place suddenly and child was apparently normal.

Similar attacks came on with increasing frequency until they were recurring about every two weeks.

I first saw the case during such an attack. Found a girl about 68½ inches tall; weight about 158 pounds; pulse slow, 64; temperature normal; respiration, 18; blood pressure, low, 106 systolic, 75 diastolic; marked girdle obesity; layer of fat over whole frame; sparse growth of pubic and axillary hair, and a dry skin.

Mental condition very sluggish; answered questions after a delay of six to ten seconds, during which time she was obviously making a marked effort to comprehend the question and to frame a reply. Unable to recognize members of the family. Totally apathetic. Made no complaint.

Reflexes: Marked lateral nystagmus, increased intraocular tension. Pupils reacted slowly to light. Patellar reflexes greatly exaggerated, six to eight contractions following one stimulus,

dermographia marked. No sphincter control whatever. No opisthotonus or rigidity. Chest and abdomen negative; blood and urine negative.

This attack lasted about five days during which time all food had to be forced. Attack ended suddenly and patient was apparently normal.

X-ray taken day after recovery showed slight enlargement of the sella with a distinct shadow bulging out of it. Reported as showing marked hypertrophy of pituitary gland.

Patient was placed on thyroid extract. Normal menstrual period came on one week after this attack.

Four weeks after the one described, patient had a similar attack which lasted four days.

X-ray following this was reported as showing some diminution in size of the pituitary. One week later menses appeared. Four weeks later third attack came, lasting only three days. X-ray showed still smaller pituitary, but marked erosion of tip of sella.

This continued until finally the duration of the attacks was only one day or less, but with the same regularity. The attacks preceded the menstrual period by one week in each instance. During the intervals the mentality was markedly improved. The child taking an interest in her studies for the first time. The same medication was continued during the whole time. A gain in weight during a period of four months was about twelve pounds.

It would seem that one here had a case with a tendency towards dyspituitarism existing before puberty, but exaggerated by the beginning of the ovarian function to the point of distinct pathological hypertrophy.

The literature quoted at the beginning of this article was all that I was able to find which seemed to have a direct bearing on this case and both of these authorities seem to agree that the disordered pituitary function was the primary cause of the existing symptoms. In this case it would seem that the ovarian function was primarily at fault, in as much as no signs of pathology were evident until after the beginning of the ovarian function. It seems, therefore, as if the pituitary, already slightly disordered, was unable to cope with the added stimulus of the ovarian secretion and a pathological hypertrophy was the result. This in turn giving rise to the symptoms described, which are the result of, first, the pressure exerted by the enlarged gland and, second, the hypersecretion of the gland.

The thyroid extract was given in the hope of diminishing the ovarian function somewhat and so secondarily lessening the excessive stimulus being received by the pituitary. The results of this treatment were apparently satisfactory in view of the reduced length of the attack and the lessened severity.

DISCUSSION.

Dr. Stanley Erwin, Jacksonville:

This is a very interesting subject to the neurologist, but unfortunately most men consider this class of cases as a "medical curiosity." They say they are nice to read about, but that there is nothing we can do for them, then it is too late. Now, the time to treat these cases is when they begin,—when the child is just a little stupid, grows just a little bit too fast and is a bit fat,—or when the little girl does not sleep well, or when there is a little bed-wetting. It is at this stage that cases of endocrine disturbance ought to be investigated.

The oculist is also interested in these cases from the point of the eye.

Most of these cases are diagnosed when there is an endocrine upset with evidence of cerebral pressure or of brain tumor. At that stage it is easy, but then it is usually too late.

I am not going to say anything about the various glands affecting the body, with the exception of, perhaps, the thyroid. Now, whether the pituitary primarily at the beginning of puberty stimulates itself or is stimulated by the thyroid, is a question. This subject is very much mixed up at present.

The treatment by giving thyroid, and the result that it has evidently produced in this girl, is remarkable,—especially so when you consider the amount of pressure there was in the case as evidenced by erosion of the bone. There is danger in giving too much thyroid.

At the present time I have a patient who is going to be operated on next Saturday by Doctor Boyd. This girl has a minus pituitary, which has apparently been present all her life. During the last five years we have been giving her ovarian and thyroid extract. At the beginning of her treatment she had an infantile uterus and vagina, and scanty pubic hair, long legs, spatulate fingers, and she spoke slowly. After feeding her thyroid and ovarian extract for a period of two years she improved. A local examination at this time showed enlargement of the various organs.

Unfortunately, her parents became interested

in Abrams' treatment, and took her to Georgia to be treated. During the time of these treatments in Georgia she continued taking thyroid and ovarian extracts. She was brought back to Jacksonville, and I examined her again two weeks ago. Apparently the local condition has cleared up. The cervix is of good size and the uterus seems to be all right. Periods are from five to six days. Her mentality is good, but she is very nervous. At the present time she has a tremor, very prominent eyes, and every evidence of a hyperthyroidism,—apparently an exophthalmic goiter. Basal metabolism showed plus 38, carefully checked.

Now, this case is to be operated, as I have said, next Saturday. However, we do not know just what the result will be,—whether it will bring her into normal girlhood, or whether she will revert to her original type.

Dr. R. R. Kime, Orlando:

When I first saw the title of the paper, "Pineal Gland", I thought we were going to hear something about the Seat of the Human Soul, as believed by the Ancients,—but it seems that Doctor Osincup is dealing with something else.

The pituitary body, although one of the smallest, is one of the most important structures in the whole human body. It is classed by Sajous as the heat center, also as the center of motion, respiration, nutrition and metabolism, controlling the adrenal system, including thyroid and parathyroid functions, thus correlating the immunizing functions of the body against disease.

We must then consider that within this structure we have two bodies, an anterior and a posterior, and that when we have a hypersecretion of the anterior lobe definite changes take place within the body, such as increased growth, gigantism, acromegaly, etc. Then consider the hyposecretion with its opposite changes. We realize we are dealing with one of the most important constructive forces in the body, according to its size. We are just on the border line of developments that are going to be of great importance to all of us in the future. Take the relation, inter-relation and physiological functions of the ductless glands of the body with a knowledge of the synergistic and antagonistic action of each, then it is not beyond the range of possibilities that future generations may develop the stature of the human race at will. This subject is going to be of a great deal of importance to all of us in the

future in the treatment of disease and regulating physiological functions.

Dr. Gilbert Osincup, Orlando, (concluding):

This case slipped up on me unexpectedly. I am not an authority on the ductless glands of the body, and am not prepared to discuss that subject at this time. I simply reported this case because it seemed to be such a clear-cut case and one which might lend some new light on the subject.

DIET IN RELATION TO CONSISTENCY OF TOOTH STRUCTURE.*

JESSE WILLIAMS, D. D. S.,
Jacksonville, Fla.

In presenting a subject before a body such as this, being composed of a large percentage of medical men, there are several phases of dental practice which would be interesting to discuss, chief among which are the problems of focal infection due to dental defects and the problem of decay of the teeth and other disorders of the oral cavity, wherein deranged metabolism due to an improper diet deficient in some of the necessary minerals, the principal one in this case being calcium, plays an important part by rendering the teeth and adjacent bony tissues more susceptible to disease.

Ten years ago, any discussion of materials passing into the mouth in the form of food or otherwise would have been confined to the local effects such substances would have on the teeth in a local way—that is, their direct effects upon the enamel and other dental tissues. However, at this time the dental profession is focusing its attention to the effects of different foodstuffs on the consistency of the teeth and their supporting structures. For some years past such men as Dr. Percy Howe, of the Forsyth Dental Infirmary, of Boston, and Doctor McCollum, of Johns Hopkins University, have made some valuable experiments with animals in this connection. The Miller theory of decay of the teeth has been almost the universally accepted phenomena for many years past. To recite this briefly, Dr. Miller, of Berlin, explained and seemed to prove to the satisfaction of most everyone for a time that dental decay was produced by lactic acid fermentation dissolving out the cementing substance which holds the enamel rods together, thereby

permitting the entrance of bacteria through the enamel which further produces and extends the decay. However, one ever-present problem which was confronting us every day was the fact that in some patients' mouths where they were using all known means of prophylaxis, they suffered from extended decay, and in other patients' mouths where they were not well acquainted with a tooth-brush, or any other means of dental prophylaxis, they seemed perhaps entirely immune to decay.

We are told if we take a handful of fertile earth into the laboratory and split it into its component parts, we find it composed chiefly of some sixteen elements. When we analyze the body of a man, we find that it, too, is made up principally of the same sixteen elements. The human body obtains them through the medium of food, and through food alone. We are also told that if we take a measure of milk, an egg, a handful of whole wheat or corn, oats or rye, again we find the same sixteen elements plus at least three marvelous compounds elaborated by the plant, though not in the soil. These compounds were not known in the modern laboratory until a few years ago. I refer here to the vitamines, "fat soluble A", "water soluble B", and the "anti-scorbutic or water soluble C."

We are told by Howe that to remove the "fat soluble A" it interferes with growth, reproduction and signs of ophthalmia are noticeable. Without the "water soluble B" signs of nervousness and lack of normal growth. Without the "anti-scorbutic or water soluble C" the consistency of bone and tooth structure will be seriously affected. The anti-scorbutic vitamine being the chief one concerning teeth, we are told this is located in raw foods and fruit juices and that man cannot live without it. In addition to leafy vegetables, he suggests milk and eggs. In connection with the above, he also recommends baked potatoes—skin and all—canned tomatoes, if fresh ones cannot be had. He calls attention to the control of a large per cent of salivary calculus which is often seen on the necks of teeth by the administration of "anti-scorbutic vitamine C." Doctor Howe mentions feeding filter paper C. P. as an indigestible residue in cases where enough other roughage cannot be obtained. He calls attention to the condition of the intestinal wall in cases fed on a deficiency of "anti-scorbutic or water soluble C," saying it is thick, congested and often presents small ulcers, while

*Read before a Staff Meeting of St. Luke's Hospital, Jacksonville, April 4, 1924.

when properly fed with ample roughage the gut wall, which is referred to as "the gateway of food into the body," is thin and healthy. A deficiency in "water soluble C" will produce loose pyorrhœal teeth and dental decay and bony support of teeth interfered with seriously. Other structural changes noticed are decalcified spots and molecular disintegration in tooth structure. In other words, his experiments indicate that in foods deficient in these necessary elements the teeth are changed and rendered susceptible to decay. These cases proceed to where tooth structure (the dentine) can be cut with a razor and if fed properly, the undecayed tooth structure will return to normal. He calls attention to these cases—all showing joint involvement, sometimes the bone itself becoming bare and the skin falling off—also eye involvement from spots on the eyes to cataracts; some of their offspring being born with one eye, no eyes—clubfoot, degenerated heart and kidneys and gastro-intestinal involvement. There are a good many eminent authorities whose statements stand on record as saying that "defective teeth are symptoms of malnutrition." The normally nourished possess sound teeth. The food had prior to and during the entire period of dentition seemed to be exceedingly vital. We have often heard it said, "No nation was ever so well-fed as America," but such flattery does not compensate for the infirmities so willfully ignored. Flattery is a poor substitute for the riches God has provided for his children.

The average farmer, as far as his soil is concerned, instinctively recognizes the meaning of pure food. He knows if he does not supply his vegetables and grains with the right kind of soil-food, he will reap a stunted and feeble crop. Wondrous are the operations of Mother Nature, but she will not stand willful abuse. Not a physician here would tolerate incompatibles in his prescriptions, but if we are to believe McCollum and McCann, in hundreds of homes in the United States today there is complacent toleration for food abuses that sap the stamina of the race. To quote McCann further: "Our Washington authorities, although they have occasionally spoken in plain terms, do not now refer to the menace of 'refined' cereals or 'improved' starches, of 'denatured' sweets and fats, of 'patent wheat flour,' of 'degenerated' corn products, of 'polished' rice, of 'demineralized' corn and potato starch, of 'robbed' rye flour, or 'refined' sugar, or any of the other manipulated foods sold in beautifully

decorated packages that attack the vitality of prospective and nursing mother, child, soldier and civilian worker."

Cattle food and fertilizer are considered by the State and Federal Government of more importance than human food. The world disregards the most beautiful of Nature's laws in its consumption of degraded, debased, denatured foods, and then murmurs against fate, blaming it for the prevalence of disease upon the earth. We are told any combination of natural foods, unrefined, which we can think of, will place at our disposal the raw materials needed by Mother Nature in her function of protecting the body. We are taught new, red blood arrests disease, and that new, red blood depends on correct food. Of 10,500 school children examined, the British Dental Association found 86 per cent suffering from defective teeth and they pronounced it a result of diet lacking in the mineral substances upon which bones, teeth and tissues depend. Those who refuse to accept this fact are referred to the results of experiments of Doctor Geis, of Columbia University, in his analysis of the mineral content of defective teeth.

Of 42,750 children examined by Dr. William J. Galvin, Chief of the Division of Child Hygiene of the Boston Board of Health, 27,795 were described as defective. Of 1,694 children examined in six clinics, by Dr. A. Freedman Foote, eleven were found to possess normal teeth. In many instances he reports the molars were decayed to the gum line. The New York Department of Health, through Dr. T. Van Wincke, examined the teeth of 231,081 school children of New York City, outside the dental clinics, and found 131,747 children with defective teeth. We are told that these defective teeth are the direct result of the inability of the body to obtain, in their proper form and in their proper combination, the calcium, magnesium, phosphorous and flourine necessary to the construction of normal teeth, principally because these mineral substances have been removed from the food of the children. We are told that many foods on which children are fed have as much as 75 per cent of the lime natural to them removed by refining processes before they are put upon the table. We have always spoken of bread as the "Staff of Life" What, then, if the staff on which humanity leans so trustingly be broken by being demineralized?

The hundreds of "rejects" cast aside as physically unfit in the medical examinations of our

first draft of 1918, have opened the nation's eyes. The foregoing reasons are why the dental profession is beginning to recommend to patients the whole grains, finely ground, containing all the mineral salts and vitamines, instead of the refined, sifted and bolted cereals and breadstuffs; why we recommend every ripe fruit that grows; why vegetables and greens should receive ten-fold the attention they now enjoy; why the waters in which vegetables are cooked should not be discarded, but served in the form of soups; why more milk should be consumed; why meat should always be accompanied by an abundance of vegetables; and why no child or adult should pass a single day without consuming fruit in some form; what eggs mean to the diet; why natural sugars, such as brown sugar, cane syrup, old-fashioned maple syrup and honey should be eaten instead of refined sugars and glucose syrups. In recommending these substances, we ask patients not to go contrary to diets previously outlined by their physicians, perhaps for some vital reason, but to consult with them always in cases where they are under medical treatment.

The serious consideration of diet is nothing new with you men of the medical profession. What I have hoped to present, however, is how correct nutrition will affect dental tissues in so far as we understand.

To summarize briefly, we feel that the function of the dental profession is not only to operate but also to educate. That with us, now as never before, the problem of a correct diet is paramount if prevention is really to mean what it should in caring for the teeth and adjacent structures. That ever since the birth of the dental profession in 1839, when the first dental school was established in Baltimore, very little progress has been made in preventing decay of the teeth, and that if this control ever comes to any appreciable extent it will be through the medium of control of the proper minerals in foodstuffs. That the masses of American people have drifted into habits of consuming denatured, demineralized foods, not realizing the harm that may result, and that the food manufacturers and manipulators while no doubt realizing these facts to some extent never will correct it until public sentiment demands it, and that through the education of patients by the physicians, dentists, dieticians and nurses as to correct food materials needed will be the chief ray of hope in overcoming errors in this all-important subject of diet.

If time permits, we will be pleased to make the attempt. One question already asked was: "Why are dentists continuing to insert certain types of dentistry which are questionable as to their asepsis and effects on a patient in a systemic way."

OUR RESPONSIBILITY IN GONORRHEAL EYE INFECTION.

CLAYTON WASHBURN, M. D.,
Jacksonville, Fla.

The subject here considered is not a new one, but, nevertheless, has been a momentous one for ages because the outcome when unfavorable is so disastrous to the subject, the community and the State, that we owe it to humanity and to ourselves to review and reconsider from time to time the treatment and handling of some of these old diseases.

It is with this in mind, and presenting some few new features in the handling of such, that this subject is presented to the staff of St. Luke's Hospital.

Hospital staffs oftentimes have an unfortunate habit of getting into a set, routine method of treatment, especially as to service cases, and when men of highest authority in our profession are working out and giving to us new ideas for both old and new conditions met in every-day practice, it is a duty that we owe to the patient and to the profession at large to take up without harm to the patient, and put to use, or discard after finding same of no service, some of these advanced ideas. In this way some really worth-while procedures can be made of much benefit to humanity.

This old and at the same time ever-present condition of gonorrhreal infection of the eyes, is brought to our attention anew by the admission to the eye service of St. Luke's Hospital of a totally blind baby with an active infection still present. The child having been without care or treatment for two weeks, or since birth. The outcome is typical with this form of infection with this unpardonable neglect. The result is a sloughing and ruptured cornea with a dense, white leukoma, without hope of benefit from any source.

This particular case is the outcome of unfortunate circumstances,—the mother being feeble-minded and the father indifferent and unconcerned. But this disastrous result to a child's eyes happens now and again when there are no extenuating circumstances upon which the physician or attendant can shift the blame.

All of you have a vivid picture of those markedly edematous lids with pus literally pouring from the entire lid margins. You have in mind also as stated in the textbooks that a gonorrhreal infection makes its appearance from a few hours to 48 hours after birth and this is a fairly accurate guide notwithstanding the typical appearing infections that take place at a later period, perhaps up to ten days or even two weeks. These infections coming on later are infections subsequent to birth, either from carelessness in caring for both mother and child or due to some other form of infection.

In the adult the source of infection is usually from an acute gonorrhoea by contact with soiled fingers or soiled linen and considering the frequency of gonorrhreal infection, it is remarkable that the percentage of eye infection is as low as actually exists, but the percentage of those who get eye infection and escape without some permanent damage is also low. The child evidently inherits a certain amount of immunity from the infected mother, this having a tendency to abate the local symptoms in the offspring.

The diagnosis is ordinarily easy. In the adult there is usually the history of an infection. In the child the time and character of the onset are the leading features. As stated above, the most striking symptoms is the marked œdema of the lids with the copious flow of pus. This, of course, is preceded by redness, slight discharge, chemosis and congestion of the conjunctiva in rather rapid succession. A smear under the microscope may show the Neissarian organism at the first trial, but there is, especially at the beginning and during the later stages, a mixed infection including perhaps the pneumococcus, diplobacillus or inclusion blennorrhea infection making the diagnosis at times uncertain without making cultures and in these marked types it is not safe to delay treatment, but begin active treatment at once and change later if necessary. On the other hand, if there is any question as to the kind of infection it is much safer to await a positive diagnosis than to make any definite statement to family or friends as to the cause and then be forced to retreat from a stand that might have been somewhat embarrassing to the ones concerned.

The condition is always serious and the more virulent the infection the greater the danger, and the danger is in its action upon the cornea. This may be from a slight haziness to complete destruction.

In dealing with these infections, prevention should be first and foremost, and how best to accomplish this has been a question of controversy for many, many years. Most of the States have considered many methods; a few have passed laws, but most of the legislation has been in the way of recommendations.

In treatment, the Crede method of using 2 per cent nitrate of silver immediately after birth seems to have stood the test better than any other form of treatment, but it is still a question whether any compulsory form of treatment should be carried out promiscuously by all types of physicians and midwives. Such procedures may give a false sense of security or might possibly cause damage, by bungling treatment, to otherwise normal eyes.

There ought, at least, to be a law in all States making it compulsory upon both attendant and parent to report to the proper authorities within twenty-four hours all cases of discharging eyes during the first ten days. The State of Florida has such a law, but laws alone will not save eyes.

In the case of an adult coming under the care of a physician with the Neissarian infection, it ought always be a part of the treatment to warn the patient of the danger of eye infection.

In the case of known infection of the mother, the child, immediately after birth, ought to be taken in charge by a competent nurse, its face thoroughly washed with soap and water, the eyes copiously flushed with pure, warm water and 2 per cent nitrate of silver instilled in the eyes, yellow oxide ointment smeared on the lids and no other bathing of face and eyes for the next twenty-four hours for fear of secondary infection from the body surface; also it is not advisable to have the same nurse caring for the mother, care for the child's eyes after the emergency first treatment.

In both child and adult infection the chief aim is to keep the eye as free as possible from the rapidly accumulating pus. This is done with frequent flushings with any non-irritating solution, one of the best, however, is a weak solution of mercuric cyanide, the usual formula is composed of mercuric cyanide and sodium borate this in a 1/5000 solution makes an excellent medium for thinning the heavy secretion and is at the same time an active germicide.

The greater percentage of infants, with the certain amount of immunity which they have acquired in utero, will recover with a rigidly

carried out flushing treatment alone, but they will require careful watching, and with so much at stake it is hardly safe to depend on this alone. Gentleness in handling means much, for the slightest abrasion of the cornea will most certainly be followed by a sloughy ulcer. This in the majority of cases leading to perforation and destruction of the anterior segment of the eyeball with a matting together of the inflamed and displaced structure giving us the distorted white eye of adherent leukoma.

Within the past two or three years, much to the relief of all men in the medical profession, there has come to our hands a new procedure in treating these dreaded infections which gives us the feeling of something to which we may anchor. This is the remarkable results obtained with the protein injections in these cases. Some three years ago in discussing the viability of the Neissarian organisms with our present vice-president of this staff, he made the statement that discharges from gonorrhreal infection would cease almost entirely if the patient developed a high temperature from whatever cause.

The external eye structures exposed to innumerable infections from air and otherwise, develop to a remarkable degree an immunity to infection as a matter of self-preservation, so to speak. Having this power of resistance, the reaction of the general system to eye infection is comparatively slow, and it occurred to the writer, who at this time had some of these severe infections to deal with, that if a high temperature could be brought about by artificial means the eye could be tided over the most destructive period in the rapidly developing infection. This was about the time the boiled milk injections were being used, especially by the French ophthalmologists for various eye infections, and this treatment was instituted in these cases with surprising results.

In a series of cases of gonorrhreal ophthalmia reported since by Pillat, smears being examined every six hours, it was found that after two injections the gonococci generally disappeared entirely from the conjunctiva on the third or fourth day.

Lieberman states: "The method is empirical, as it is really not known how the milk acts, but that is no reason to refuse to acknowledge what prominent clinicians have testified."

Phagocytes and active bacteriocidal substances are evidently freely formed with the increased production of natural antibodies. This infiltration brings about a change in the pressure on the nerve filaments as well, for pain is relieved almost at once.

From the abundance of clinical evidence given to us by men of recognized standing it would appear that the treatment is not only justifiable, but required in the severe types of gonorrhreal infection, and the time is not far distant when anyone refusing to use some kind of protein treatment and allowing eyes to go to destruction will be censured as one refusing to use antitoxin in a case of diphtheria.

It need not necessarily be cow's milk, but this has proved so successful and is so easily obtained that there seems no reason at present to resort to other so-called refined proteins.

The technic is simple and requires but few injections, two to six, two or three days between.

It is not intended that the protein treatment shall replace the regular, established treatment, such as ice compresses for the first few hours to inhibit the growth of the organism until the systemic reaction occurs, the thorough but gentle cleansing, the use of a mydriatic and the protection of the sound eye, for the injections will not prevent the infection of the fellow eye.

The treatment is intended to augment all the recognized forms of treatment of these infections.

**ANOTHER AVENUE OF VIOLATION OF
THE HARRISON ACT TO BE
GUARDED AGAINST.**

R. W. BLACKMAR, M.D., AND
B. F. WOOLSEY, M.D.,
Jacksonville, Fla.

Probably there is no legislation of recent times of a purely public health nature from which the public should derive as much benefit as the Harrison Narcotic Act, and for the general public, the medical, dental, and drug professions to enjoy the fullest benefit from this law, a closer co-operation must be entered into to watch for possible violations and to assist in the enforcement of this measure.

With the foregoing in mind, we wish to call to your attention a practice of the many detail men who call on the physician, representing their various lines, and after either leaving us samples, or attempting to get orders for their respective houses, for supplies, instruments, or books, will frequently request us to give them a prescription blank, in order that they can show their employer an evidence of their visit.

Without the slightest reflection upon any of the detail men, whose visits are nearly always a pleasure, and profitable to us, we wish to condemn the practice of distributing prescription blanks in lieu of business cards, on account of the ease with which forgeries can be perpetrated.

Many times the physician is asked for one of his cards by people who wish to have his name, address, and telephone numbers for future reference, and the physician gives them a blank prescription blank which may fall into some one's hands who may be an expert on writing narcotic prescriptions, and the forger may not be a professional man at all.

Recently, we were told by a friend, a detail man, who, after visiting the profession on a certain day, went to his hotel, and while making his daily report to his house, had on the table before him several cards and prescription blanks which he had gathered that day. The bell-boy in bringing him ice-water caught sight of the prescription blanks and immediately began negotiations for the purchase of the blanks. This detail man stated that this bell-boy admitted to him that he could get five dollars apiece for the desired blanks.

From the foregoing incident we may safely conclude that at least some prescription blanks are filled in for narcotics, forging the physician's signature and narcotic number, which is usually printed on his prescription blank.

With these facts before us for the first time, we believe it our duty to call to the attention of the profession who prescribe and dispense narcotics for the relief of suffering, to use great caution to prevent possible forgeries and thereby greatly aid in the intent of the Harrison Narcotic Act.

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CO-OPERATION

Work of any nature in which we mortals may engage, for its successful culmination, requires co-operation. With the last issue of THE JOURNAL increased interest was added to our reading pages by publication of the discussions of papers read at the Orlando meeting. These discussions were reported by a stenographer who had had no previous experience in work of this nature. Her work has brought forth favorable comment from many of our readers and from our essayists. THE JOURNAL now holds typewritten reports of all discussions of papers read at the Orlando meeting. Copies of these reports are being mailed to all members who entered into the discussion of a paper. It is very necessary if any corrections are desired that the report be promptly mailed back to THE JOURNAL. We, therefore, ask for the co-operation of our members in this little matter of detail.

PUBLISHER'S NOTE

DOES MERCURY KILL SPIROCHETES?

The experimental work recently conducted on animals by Nichols, Brown and Pierce, Hill and Young, Gruzhit, and others has clearly demonstrated that when an adequate dose of a mercurial salt is injected the spirochetes are killed—directly by the mercury.

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ORIGINAL ARTICLES

THE FULL-TIME HEALTH OFFICER

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The full meaning of good health, or that state of well-being which makes life worth while, is rarely ever adequately appreciated until something deprives us of it—accident, injury, unavoidable causes or, what is more common, disease.

Other considerations being equal, disease, loss from fire or theft, and crime are prone to develop in proportion to the number of people living in limited areas. In cities with the close contact of buildings and the universal use of electricity, more danger from fire is anticipated than in the outlying sections. Recognizing this simple fact, there is always an appropriation for the maintenance of a fire department in a city's annual budget.

In cities where one's identity may be submerged in the masses, where opportunity presents for crimes of various sorts, and where hiding places of easy access abound, there is always found an underworld and a criminal class. In recognition of these conditions and for the public safety in general, appropriations are made annually in civic administration for the maintenance of a police department.

In cities with the continual intermingling of people in street cars, in stores, in schools and colleges, theatres or moving picture houses, and in offices, conditions are created favorable to the spread of contagious disease. Housing problems contribute to a large extent in fostering tuberculosis, while milk and such farm products as are consumed raw may well be the medium of spreading the diseases of soil and water pollution, of which typhoid fever is a notable example.

There does not seem to be, however, the same feeling of concern regarding the saving of human life as there is in means to protect property against fire and theft, perhaps because the possibilities are not so obvious and not so well under-

stood. It is often difficult to obtain sufficient funds to maintain an adequate full-time health department with a full-time health officer in charge of the work. It is common to find, even in cities of 10,000 and over, health departments with a part-time physician in charge, who undertakes to administer the health department and engage in general practice as well—two incompatible duties.

The United States Public Health Service, requesting information from 745 cities of a population of 10,000 and over, learned that only 394 or 52 per cent had full-time health departments. The remaining 48 per cent either had no health department or had part-time organizations only. It may thus be seen that there are many hundreds of thousands of people who are not enjoying the right of adequate protection.

Health officers are conspicuous by their absence. The county health officer is the best return on an investment that a county can make, yet in a recent publication the United States Public Health Service pointed out that in the 2,850 counties in this country, representing 51,406,017 people, only 5,957,616 rural inhabitants were supporting full-time health organizations. In other words, over 89 per cent of the people in our rural districts are not protected by a full-time health service.

The money for full-time health service comes from the general fund; the general fund is derived from revenues, principally taxation; the people pay the taxes and have a voice in saying how the money shall be spent.

Popular demand creates full-time health departments and this demand popularizes clean, safe milk for babies, better health care of children in school, the protection of households from epidemic diseases, the regulation of the sale of clean foodstuffs and beverages, the safeguarding of water supplies, the distribution of vaccine and antitoxin and many other things which contribute to a better state of health and consequently a happier existence.

We feel secure in knowing that there is a department nearby to protect us and our homes

from fire. How many are equally interested in a department to put out the epidemic fires which can spread so quickly, and can one feel secure if the community does not support such a department?

The Health Department not only acts in times of stress and emergency but is constantly alert to prevent just such occurrences. From the time one is born, throughout childhood and manhood or womanhood, even until death terminates one's career, which should be late in life, the Health Department is in more or less contact with one's daily life—safeguarding the milk, water and food supply, exercising quarantine when necessary, providing or assisting in the provision of baby welfare clinics, child hygiene operations and school inspections, sponsoring public health nursing, advocating sanitary sewer systems and safe methods of garbage disposal, preaching public health and many other important things which are little known or, if known, are too little appreciated.

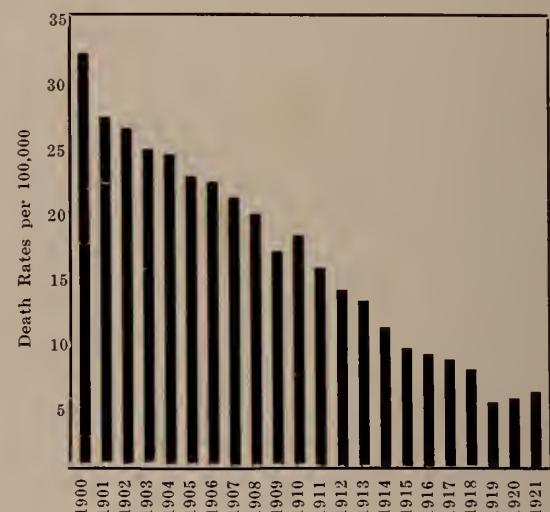
To the citizen we may say: If you have a Health Department as an integral part of your city or county government, get better acquainted with it. If you find that it is only part-time, think what you would do and how you would act if you had only a part-time fire or police department and do as much to strengthen the agency that protects your life as you would in advocating proper protection against fire and robbery.

Full-time health departments are always good investments in advertising the community. The prosperity of each city and each rural section depends on the type of citizenship supporting it and a promise of good health insurance will, or should be, a big factor in decisions as to what constitutes a good place in which to live.

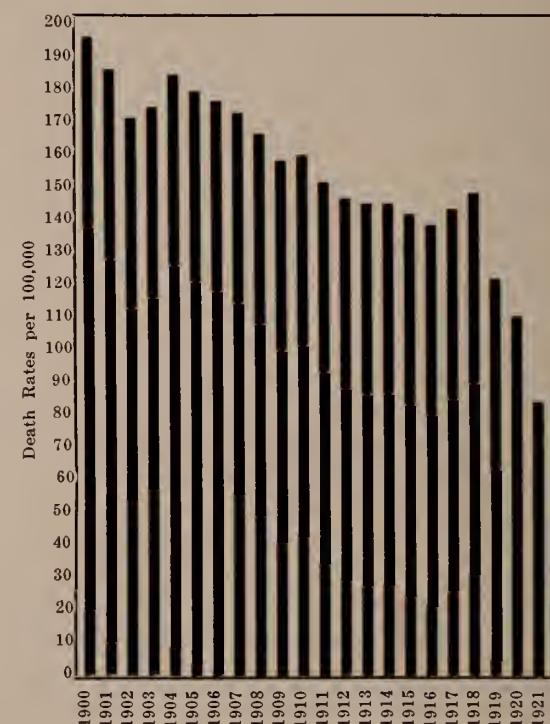
Remember that good health is in great measure purchasable, and support the expenditure of public money, which is your money, to promote adequate full-time local health departments to protect you and your family in particular, and to promote the welfare of your community in general.

To the physician we may say that duty demands that he should ever be ready to assist his State or local government in the work of preventing disease. There is no profession in the world so actively engaged in striving to remedy and remove the conditions which called it into existence as is the medical profession. The fact that this is not appreciated, indeed not at all

believed, by many uninformed people, does not deter the conscientious physician from continuing to render humanitarian service in the prevention of disease. Full well he knows that with our rapidly increasing transportation and our likewise rapidly increasing population, the dangers from communicable diseases are correspondingly multiplied. There is no question but that if our present safeguards of health were suddenly removed, our large centers of popula-



Deaths from typhoid fever per 100,000 population in the original registration States, 1900 to 1921, inclusive.



Deaths from tuberculosis per 100,000 population in the original registration States, 1900 to 1921, inclusive

tion would speedily become veritable holocausts of suffering and death.

Let us emphasize then the necessity of the full-time, adequately paid health officer. In doing so I shall close this paper by referring to two charts reproduced here, taken from the annual report of the Surgeon General of the Public Health Service. These charts illustrate in a very striking manner the success of the battle against two of our infectious diseases, namely, typhoid fever and tuberculosis, during the past two decades.

THE USE OF DIPHTHERIA TOXIN-ANTITOXIN AND ANTITOXIN IN THE PREVENTION AND TREATMENT OF DIPHTHERIA

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New York.

All physicians recognize that antitoxin is the one reliable remedy in diphtheria. The majority of the people also, in a general way, believe in antitoxin. The difficulty is that the people absolutely, and the physicians to some extent, do not realize the importance of giving antitoxin early and in sufficient amount.

Dr. Roberts, in 1922, studied five hundred fatal cases of diphtheria which occurred in New York State in the portions outside of New York City. Only six per cent of the cases that resulted in the five hundred deaths were treated with antitoxin on the first day and in none of these was a sufficient dose given. The results of these investigations impress the importance of both physicians and the laity realizing the necessity of giving antitoxin early in cases of diphtheria. In any case in which a physician on his first examination thinks the case would be dangerous, if it were diphtheria, antitoxin should be given before waiting for a culture. It is certainly far better to give antitoxin unnecessarily with possibly the development of a serum rash, than to delay for a certain diagnosis and then give it possibly too late. The private physician as well as the Health Department official must see to it that the people in general realize that a case of suspected diphtheria should be reported at once. If the suspicion seems justified the physician should give a dose of antitoxin. In most parts of the country physicians realize that antitoxin should be given as a single and sufficient dose. The antitoxin after being injected remains in the body for from

one to three weeks, being gradually dissipated. As the use of antitoxin is to neutralize the antitoxin it is evident that there is no reason to divide the amount to be given into several doses. It is true that improvement seems to follow the second or third dose, but that is because it requires a certain amount of time for improvement to begin, and if the antitoxin is given in a single dose the improvement will be greater and more rapid than if the amount had been divided. In serious cases antitoxin should be given intravenously. In this way the delay which takes place because of slow absorption when it is injected into the muscles is avoided and the full amount of antitoxin immediately circulates throughout the body and begins at once to pass slowly out the capillaries. Dr. Roberts found in his analysis that quite a number of deaths happened because the patients were not kept in bed long enough to provide against the danger of cardiac failure.

The Use of Antitoxin as a Preventive

Some physicians seem to think that because we have toxin-antitoxin to immunize that antitoxin is no longer needed for this purpose. This is far from being the case. In any case of a young child where exposure has occurred to an actual case of diphtheria a dose of five hundred to one thousand units of antitoxin is indicated. This will give protection for at least two weeks. It is true that this injection of horse serum sensitizes the children to later injections, but the danger is very slight indeed of this sensitization being sufficient to have serious practical importance. If one knew that a child had received an immunizing injection one would be very cautious in giving an intravenous injection of serum, but if the necessity was great one would not hesitate.

The Use of Toxin-Antitoxin

This has now been employed in New York City for a period of ten years and more than three hundred thousand children have been injected and not a single accident has happened. Until recently the Schick test was done in the older children and those that showed a positive reaction were immunized, while in the younger children three injections of toxin-antitoxin were given without the Schick test. The results have been that about 90 per cent of the nonimmune children became immune some three to six months after receiving the three injections.

For a year we have been using the toxin-antitoxin at the same time both as an immunizing agent and a modified Schick test. If the toxin-

antitoxin is of standard strength and one c.c. is injected strictly subcutaneously in the anterior part of the arm there will develop a reaction similar to but a little larger than the Schick reaction in all children who are not immune. In addition to this about five or ten per cent of the children will show a reaction because of the protein substances in the antitoxin. In little children the Schick test and subcutaneous toxin-antitoxin injections give practically the same results. The test should be read on the fifth or sixth day, otherwise too many pseudo-reactions will be noted. The use of toxin-antitoxin is easy and loses one injection if it replaces the Schick test.

The Toxin-Antitoxin Preparation

The old standard toxin-antitoxin mixture which contained three L₊ doses of toxin with a suitable amount of antitoxin has been almost entirely replaced with our new preparation of one-tenth L₊. The immunizing results are equally good, as is shown in the following table:

Amount of Original Toxin in 1 C.C. of Mixture	Number of Children Receiving 3 Injections	Per Cent of Nonimmunes Shown to Be Immune on Schick Test Four Months Later
0.1 L ₊ * (4 lethal doses)	490	90
0.5 L ₊ (20 lethal doses)	304	95
3.0 L ₊ (120 lethal doses)	318	92
5.0 L ₊ (200 lethal doses)	487	85

*The mixture is made by adding three-fourths unit of antitoxin to one L plus dose of toxin. The toxin and antitoxin should be diluted in cold water and the two solutions mixed immediately. If the toxin is diluted in water at room temperature, it deteriorates rapidly.

The fact that it contains only one-thirtieth of the protein substances caused it to produce much less local reactions. With this new preparation only about fifty per cent of the children show any local reaction. A comparison between the different preparations is shown in the following table:

	New Preparation 0.1 L Plus*	Old Preparation 3 to 5 L Plus
No local reaction.....	25	0
Slight local reaction.....	64	41
Moderate local reaction.....	11	37
Marked local reaction.....	0	22
Among those showing marked reactions there was a rise of temperature of from 1 to 3 degrees F., and other constitutional symptoms in	0	6

*If the 0.1 L plus preparation is underneutralized more than the amount advised, there will be a local reaction from the excess of toxin.

About two years ago Hooker, of Boston, showed that the injection of toxin-antitoxin caused a certain amount of sensitization and he suggested that goat serum antitoxin instead of horse serum antitoxin should be used. Personally I do not think the objection is a serious one, but it certainly has influenced a number of physicians to withhold the toxin-antitoxin. There is absolutely no reason why goat antitoxin should not

be used and we have already prepared such a mixture and in time we will probably introduce it instead of the horse serum antitoxin. Another method of avoiding this possible objection is to act on toxin with formalin and so form a toxoid. We have used the toxoid in several thousand children and it may be possible to so standardize this as to use the formalin instead of the antitoxin to lessen the toxicity of the toxin while still leaving its immunizing property.

What Have the Results Been in New York City and in New York State?

Last year the mortality from diphtheria in both the city and State was less than one-half of what it was five years ago when we began this work, and the same is true for other places. The statistics for the city are seen in the following table:

Diphtheria; Incidence and Mortality, 1919-23.

Year	Cases	Deaths
1919	14,014	1,239
1920	14,166	1,045
1921	15,110	891
1922	10,427	874
1923	8,050	547

It is recognized that all this improvement cannot be due to the antitoxin injections. The Health Department has tested and treated some five hundred thousand school children and some fifty thousand children of preschool age. We do not know how many little children have been injected by private physicians. What we know is that every school child has taken home a circular to its parents requesting that the child be immunized and also speaking of diphtheria antitoxin. We know that about one-half of the school children have been immunized and that this certainly blocks the passage of infection from one home to another. We know that more families know more about diphtheria because of these circulars and because of the decision that the parents had to make. It is, therefore, the combining effect of the immunizing doses by the Health Department medical inspectors and by private physicians together with the general education of the people of the city and State of New York that has brought about this striking reduction in morbidity and mortality. We have the means of ridding the community of diphtheria. It depends whether we can bring the people to accept these means and whether the Health Department and the private physicians think it worth the cost and trouble to carry out immunization. As to antitoxin I am sure all are agreed that we must impress on the people the importance of its prompt use.

FLORIDA'S LEPROSY PROBLEM

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It may come as a surprise to many physicians in the State to learn that Florida has a leprosy problem. There is nothing about this situation which need alarm us nor give special concern to the health authorities, but it does require careful and intelligent handling, and, as is true of so much of our public health work, satisfactory progress will be made only after the sympathetic support of the medical profession has been secured.

A survey made four years ago jointly by Dr. B. L. Arms, Director of the Bureau of Diagnostic Laboratories of the State Health Department, and the writer, showed a total of about twelve known lepers in the State. If the experiences of other places may be applied to Florida there were at that time at least as many cases not known to the Health Officers as the number I have given—in other words, in communities in which leprosy is found, for every known leper there will be one who has not come to the attention of a physician who diagnoses the diseases, therefore the case is not recognized and not reported to the health authorities.

Leprosy is but little infectious and the risk of conveying it from one person to another is comparatively small; this is due in part, at least, to the fact that most of us present a very considerable degree of resistance to this infection, as we do to most infectious diseases. Even when opportunity for the transmission of the disease is as good as it seems likely to make it, that is, when people live in the marital relation, not more than about 5 per cent contract leprosy.

The significant fact about leprosy in Florida is that a great majority of cases unquestionably originate in the State; thus, considerably more than one-half of the cases found when the survey was made several years ago had never been out of Florida. It is, of course, widely known that from the point of view of the epidemiology of leprosy this country may be divided into two parts; one part embraces, roughly, the States bordering on the Gulf, in which area leprosy is communicable from person to person; the other part embraces practically all the remainder of the country; in the latter area leprosy shows no

tendency to spread. An example will aid in clarifying this statement. In Louisiana, which has the largest number of lepers of any State in the Union, the disease appears to be pretty freely transmissible, nearly all the cases in that State being natives thereof and having acquired the infection within the State; on the other hand, in our northern communities leprosy shows no tendency whatever to spread. Many imported lepers have been domiciled in the larger cities and some in the country districts but, practically speaking, no extension has occurred. From the point of view of public health, leprosy may be ignored in the northern States while in the Gulf States every case of leprosy is a potential source of danger to the community.

It seems unnecessary to discuss the symptoms of leprosy since any text-book will give a satisfactory picture of the disease.

Diagnosis: With respect to diagnosis it is perhaps safe to say the difficulty is not that the physician does not recognize the disease once his attention has been directed to the possibility of the presence of leprosy, but rather that the possibility does not occur to him. The advanced, well-marked case is readily recognized, even by the layman; however, the very early case and the very mild case may be extremely difficult to recognize. It is in cases of this kind that laboratory diagnosis is helpful. A smear preparation made from a skin lesion or from the scrapings of a nasal ulcer or from the nasal mucosa will often show acid-fast bacilli in such number and of such shape and arrangement as to practically exclude anything other than leprosy.

Perhaps a word of warning should be given concerning the examination of smears from the nasal cavities; acid-fasts are found in many conditions, even in apparently normal individuals; they are usually atypical in shape and few in number; however unless quite characteristic, they should never be made the basis of a diagnosis of leprosy.

Treatment: The treatment of leprosy is of course unsatisfactory. As in other prolonged diseases the hygiene of the surroundings and of the patient must be looked to and an abundance of suitable food must be provided.

We are without any specific medication which is of value in all cases. The therapeutic stand-by is the oil of chaulmoogra or one of its derivatives; within recent years there has again come into popularity the use of the ethyl esters of the

acids found in the oil mentioned. The sodium salts of the same acids have also been used, and in each case those who have had much experience believe that results are to be attained which are much superior to those secured when the crude oil is used.

Prophylaris: There is just one thing to be said here and that is that the leper should be removed from the possibility of association with people; to all intents and purposes this means isolation in a special colony. Such a place is now available and is known as U. S. Public Health Service Hospital No. 66, at Carville, Louisiana.

THE PROBLEM OF THE CRIPPLED CHILD

By J. KNOX SIMPSON, M. D.,
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When we think of the objects underlying the organization and perpetuation of the Public Health Department of a great State like ours, we like to think that it is a true indication of the desire of those of us who are able to contribute the necessary financial support of the government, to take care of our less fortunate brothers just a little better than we do ourselves. I am thinking now of a young army of crippled children, whose outlook upon life is warped and cramped; whose parents are unable to bear the financial burden incident to reclaiming them; and who will, except for assistance from the State or private philanthropy, go through life on the debit side of the ledger of our personnel.

This problem can be best presented, I think, by asking and answering three pertinent questions:

1. What is the problem of the crippled child?
2. What is being done to solve this problem?
3. How can it be satisfactorily solved?

In answer to question one: In States where accurate child surveys have been made, it has been found that there are fifteen hundred crippled children to each million of population, and that 80 to 90 per cent of them are children of indigent parents. This would mean that we have at least twelve hundred indigent crippled children, under fifteen years of age, in Florida. The problem, then, in abstract, is to find, care for, cure and educate these children; to be prepared to prevent as many of these casualties as possible in future, and to continue taking care of the unpreventable ones.

In answer to question two: I think a few statistics gotten up a year ago, though statistics are proverbially dry, might be of interest here.

Nine of the thirteen Southern States have no appropriation for the care of their crippled children, and four have yearly appropriations as follows: North Carolina, \$65,000.00; Virginia, \$25,000.00; Maryland, \$20,000.00, and Florida, \$10,000.00.

In addition there are the following institutions supported by private philanthropy: Masonic hospitals in Louisiana, Georgia, and Texas; two hospital schools in Maryland with a total capacity of 109 beds; two in Tennessee with a capacity of 50 beds; one in Kentucky, and four clinics in North Carolina, the capacity of which I do not know. This, of course, is a wonderful amount of work being accomplished by private endowment, but this should be recognized as a distinctly State problem, and financed as such.

Our own State was one of the first to acknowledge the responsibility it has to the crippled child when, in 1911, due to the untiring efforts and pioneer work of Drs. R. C. Turck and J. Y. Porter, the legislature made an appropriation of \$10,000.00 per year to carry on this work. This appropriation has been available each year since, with the exception of the past two years, ending in June, 1924.

A great deal of good has been accomplished, but the funds have been so limited that not more than fifty of the twelve hundred children could be taken care of each year; so you see it has really amounted to not much more than an acknowledgment, on the part of the State, of its responsibility to these children. This work is still in progress, under the jurisdiction of the State Board of Health.

In answer to question three: Let us consider what the ideal management of this problem should include, and how this can be accomplished by the State.

Included in the reclamation program should be:

1. The finding of the children by an adequate and continuous child survey, which would make available information concerning the type of disability from which each child suffers, the necessity for hospitalization, and the benefits which could be expected therefrom.
2. Correction of the correctable disabilities, by competent orthopedic surgeons, in hospitals and convalescent homes properly equipped for this

purpose, and not too far removed from the district from which the children are to be drawn.

3. Follow-up work by competent social service workers, who will contact the child in its home after it leaves the convalescent home, and see that progress on the road to normalcy is not interrupted, and that the child reports to the nearest examining center when necessary for adjustment of braces, etc.

4. Special education, which should be carried on all during the corrective period, finally turning the cured cases into our public-school system, equipped to take up the regular school curriculum in grades with the normal children of their age; or if the defect is incurable, or only partially curable, to carry the education along lines of useful endeavors which are compatible with the deformity from which the child suffers.

You will probably say immediately that the above plan is visionary, and entirely prohibitive in cost. Let us see if it is. The economic value of a self-supporting productive citizen has been estimated at \$6,000.00. Statistics show that 75 per cent of the disabilities in question can be corrected. This would mean the adding of 900 useful citizens or \$5,400,000.00 to the personnel of our State. This is in addition to the vast wealth of happiness which would be added to the lives of the rehabilitated children, and to those who had a hand in their reconstruction.

Entirely aside from the profits which would accrue, I think we must surely admit that it is distinctly a *duty* of the State to do this; just as much of a duty as the care of the insane and the education of the normal children. It should be more of a duty than either, because the majority of these children can be cured, which cannot be said of the insane, and they need education more than do normal children in order to be self-supporting.

One of our States stands out as a glowing example of what can really be accomplished along this line. I refer to Ohio. Originating in the mind and heart of Edgar Allen, a Rotarian of Elyria; spread by his enthusiasm and hard work throughout all the Rotary Clubs of Ohio, and framed and sponsored by them, there was passed legislation which provides hospital care for all cases, and special educational facilities in each county where there are as many as seven or eight children whose disabilities prevent their attending the public schools. The bill provides \$300.00 per year, per child, for this specialized education.

Today, as a result of this work, there are over one thousand children constantly under treatment for correctable disabilities, and eight hundred in special schools, being fitted for lives of useful endeavor, which are compatible with their deformities.

Ohio is one State which has recognized its duty and *gone to it*.

THE MALARIA PROBLEM

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Talk to almost any citizen living north of the Mason and Dixon's line who has never traveled in the South and you will find him firmly convinced that nearly everyone living in the South has malaria. Large numbers of white farmers have refused to come South to settle because they were afraid of health conditions. Manufacturers have refused to consider southern factory sites because they were told that southern labor was inefficient on account of hookworm and malaria. A letter recently received from one of the largest insurance companies in the United States stated: "Forty years ago the chief obstacle to standard underwriting in life insurance in the South were yellow fever, cholera, smallpox, malaria and typhoid fever. * * * At the present time, malaria and typhoid fever are the two outstanding difficulties in certain localized areas in the South." No other disease today plays so great a role in retarding economic development.

The idea that the whole South is malarious is an absurd and a pernicious bit of social psychology, which should be vigorously opposed. It is due to two causes. First, the idea is an inheritance from the early pioneer days when the disease was much more widely prevalent than it is now. Second, the diagnosis "malaria" was formerly used to include almost any fever or ill-defined human ailment. This led to a great exaggeration of the prevalence of the disease which are still being felt.

The malaria problem of the South then resolves itself into efforts to correct the exaggerated ideas of its prevalence, to conduct sufficient field studies to locate the areas in which the disease really is a problem of public health importance, and in these areas to promote the operation of those forces which will tend to

diminish the incidence of the disease and ultimately to cause its disappearance.

1. TO CORRECT THE EXAGGERATED IDEAS OF MALARIA PREVALENCE.

For the first of these problems the medical profession itself has been largely responsible. A report of the Board of Censors of the Alabama State Medical Association published in 1881 attributes not less than one-fourth of all the causes of sickness, and not less than one-sixth of all the deaths that occurred in Alabama to the "*Result of malarial influences.*" The report defines the term "Malarial Influences" as follows: "The following list includes the diseases most commonly recognized as malaria, but is *not presented as exhaustive*:

"1. Malarial fevers, commonly so-called, such as bilious or remittent, intermittent, congestive, hemorrhagic;

"2. Malarial neuralgias, including the so-called sun-pains or brow-agues, and bilious colics;

"3. Malarial dysenteries and diarrhoeas;

"4. Malarial dropsies, malarial leukemia, and the malarial cachexias generally."

In other words, the diagnosis "malarial" or "malarial influence" was used to label almost any diseased condition which was not specifically otherwise accounted for.

Came the great age of medical discovery. Medical science took a tremendous leap forward. The art of diagnosis became more exact. Standards of medical education and licensure were raised. The microscope and the diagnostic laboratory came to be better appreciated. The etiology of a large number of conditions hitherto not well understood were clarified. Particularly the ravages of the hookworm came to be appreciated through the efforts of Dr. Stiles and his collaborators. The sallow, anemic, lazy undernourished individual so frequently seen in certain rural districts of the South was more often the victim of the intestinal parasite than of the blood parasite. The diagnosis of malaria came to rest more and more upon the demonstration of the parasite in blood smears; less and less upon the "therapeutic test with quinine." The number of physicians who use the term malaria to denote any condition which improves *after* the use of quinine has become constantly smaller. Not many now tell a patient that he is "full of malaria" unless the parasite can be demonstrated in his blood. But the "general public" is still several generations behind.

With the increasing accuracy in "diagnosis," then, the malaria "miasm" of the South has cleared somewhat, but a conscious effort is necessary to accelerate the disillusionment. Last year the State Laboratories alone of Florida examined 6,604 blood smears taken from patients suspected of having malaria. Of these only 236 or 3.6 per cent were positive. Granting that the laboratory can demonstrate the parasites in only one-third to one-half of the clinical cases of malaria, it is still obvious that a very large number of cases would have been mistakenly diagnosed had not this laboratory service been available. With a constantly increasing number of physicians utilizing laboratory service, the error should grow constantly smaller. Laity as well as physicians are learning that the disease is not so common as was formerly thought.

Another source of information which has led to exaggeration of malaria is death certificates. A recent analysis in an adjoining State indicated that probably not more than one-half of the deaths attributed to malaria should properly have been so attributed. In less than 12 per cent of the total number over a two-year period was the diagnosis confirmed by a blood smear, and yet it is well known that the parasite can be demonstrated in the blood of 90 per cent of patients dying of the disease. "Malaria" is a very easy word to write on a death certificate when the proper entry should be "Cause ill-defined or undetermined," but as a result of the loose use of the term the State gets unenviable publicity on account of a fictitiously high malaria death rate.

Physicians owe it to their patients, to the communities in which they live and to the State to be careful in the use of this diagnosis. It has an economic significance which no other disease has. *They should confirm the diagnosis in as many instances as possible* by the examination of a blood smear.

2. TO LOCATE THE AREAS IN WHICH THE DISEASE IS REALLY A PUBLIC HEALTH PROBLEM.

As the malaria "miasm" disappears we are coming to a truer realization of the limited distribution of the disease and the conditions which are required for its maintenance.

It can be transmitted only where a particular species of mosquito—*Anopheles quadrimaculatus* (rarely *Anopheles crucians* also)—is breeding out in large numbers. This particular mosquito is rather fastidious about her breeding places. She does not like the tin can, the old wash boiler,

the rain barrel, the cess-pool or even the green scummy pond with the dank smell of rotting vegetation. These are left for the Stegomyia—carrier of yellow fever and dengue—and the pestiferous culicides.

She much prefers the relatively clean, quiet water found in the partly shaded grassy pool, the may-haw or lime-sink pond full of luxuriant vegetation, the margins of lakes or bayous, the sweet-gum or cypress swamp. She thrives in the flat, wet and partially cleared open country. *Per contra* she is rare where the land is hilly and well-drained: rare about the salt marshes and savannahs; rare where the land is dry and sandy with clear pools abounding in top minnows (*Gambusia affinis*), with clean banks and little or no aquatic vegetation.

Within one mile of this breeding place (for this is the flight range) of the malaria mosquito there must be located a population living under such conditions that mosquitoes have ready access to them—can easily become infected from them with the malaria parasite and then easily reach a new victim after the parasite has completed its cycle of development in the mosquito.

The larger the number of chronic cases of malaria in this population, the easier it is to effect this transmission. The number of chronic cases depends in turn upon neglect and lack of proper medical care. Where the population is ignorant and superstitious, where the physician is called only when death is impending, where self-medication with nostrums and inadequate chill tonics is the rule—among such people a large proportion of the persons who have malaria become chronic carriers of the parasite and are ready to supply it to any newly hatched Anopheline that may happen along. On the other hand, where medical treatment is good, quinine administered early and continued in adequate doses over a period of eight to ten weeks to prevent relapse, the percentage of cases which becomes chronic is much smaller: and it is correspondingly more difficult for the mosquito to become infected.

In the same manner, where the housing is poor, where the people live in wooden shacks, log cabins or tents with little or no protection from mosquito bites, large numbers take their blood meal upon these human beings and the chances of transmission are obviously increased.

Briefly stated, conditions which favor the propagation of malaria in the southern United States are such as are usually found:

(a) among pioneers, sawmill hands and laborers on construction projects, and

(b) among poor white or negro "tenants," "renters" or "farm hands" on cotton plantations and small farms, living under poor conditions of housing, screening and medical attention and in close proximity to a pond, lake, swamp or bayou.

It is thus seen that malaria transmission is taking place only in certain definite localities or foci where the requisite conditions as regards the insect vector—the *Anopheles* mosquito—and its human host are realized. This scattered or focal distribution of the disease is obscured by three factors. First, the long duration of the infection in man; the parasites may be carried by man, one, two, even five years or more after the original infection, with or without an occasional clinical relapse. During this time he may have moved to some distance from his original environment—and the community in which he relapses is apt to be credited with responsibility for his infection. Second, in this day of rapid and remote transportation by automobile, persons may be infected at considerable distance from their homes—on a vacation trip, on a fishing trip or on a trip to the plantation—and attribute their infection to their home environment where most of their time has been spent. Third, in a locality where a few cases of true malaria (imported infection and relapses) are occurring, there is a tendency on the part of physicians to attribute too many cases to the same cause.

Applying these principles, now, to the situation in Florida, it will become clear why the disease exists in some localities and not in others and why it has disappeared from large areas where formerly it flourished.

Where the land has been largely cleared and drained, and is being intensively cultivated, where the economic status is good, where houses are well constructed and screened, where the standards of living are high and good medical attention easily available—as is the case along most of the east coast, in south Florida and in parts of west Florida—there the disease has largely disappeared except for the occasional small focus.

On the other hand, where lumbering operations are still going on, where much of the settlement is primitive in character, where negroes form a large proportion of the agricultural labor, where the topography favors production of the Anopheline mosquito—as along the upper west

coast and in central Florida, Hernando, Citrus, Levy, Lafayette, Taylor, Jefferson, Leon, Gadsden and Jackson—here the malaria problem is still intense.

The accompanying Table I, based upon death rates from malaria, indicates in a rough way the general distribution of the disease and its relative intensity. A rate above 5 per 10,000 generally indicates a serious malaria problem. Rates below this usually accompany a scattered and moderate problem. Counties with rates less than 1 per 10,000 have been omitted since experience has demonstrated that they are of doubtful significance.

For example, in Taylor County, with an average annual malaria death rate of 14.3 per 10,000, in a survey of 626 white school children conducted last winter about one-third gave a history of "chills and fever" during the preceding year. Eight per cent of these children had definitely enlarged spleens due to chronic and repeated attacks of malaria. Of 104 blood smears examined 30 were found to contain the malarial plasmodium. One would not hesitate to say that this constitutes a serious health problem.

On the other hand, in Pinellas County, with an average annual malaria death rate of less than 1, in a very careful study of 5,174 school children made by Dr. Milton Veldee in 1921, less than one per cent gave a history of "chills and fever" during the preceding year. A large group of boys living in suspected localities were examined for enlarged spleens with negative result. The findings indicate that malaria does not constitute a health problem in this county, and this inference was confirmed by the experience of the physicians practicing in the county.

These findings represent the two extremes. In large parts of Florida there is no malaria problem at all and the prospective settler need have no fear of the disease. In other parts of Florida, the malaria problem is sufficiently severe to discourage immigration and development. Here there is a serious economic handicap deserving the most careful attention of health authorities, broad-minded physicians and an enlightened citizenry.

Further studies must be conducted by the State Board of Health to map out in each county the areas in which transmission is taking place and to study the relative importance of the disease to the general welfare and economic development of each county. When this has been done the

problem of control will have been reduced to more concrete terms. The task will assume more definite proportions. The risk of attack from malaria in Florida is confined to much more limited areas than is generally supposed.

3. TO PROMOTE THE OPERATION OF THOSE FORCES WHICH TEND TO DIMINISH THE INCIDENCE OF MALARIA.

When one faces the facts of practical field work, the control of malaria is not a simple matter. About cities and small towns it is usually relatively easy with a reasonable expenditure of money, time and effort to prevent all possibility of malaria transmission by elimination of the breeding places of the Anopheles mosquito. As a result of the energetic efforts of the State Board of Health and Florida Anti-Mosquito Association, this is being done by progressive municipalities all over the State. City and town control, however, will have little direct effect upon the malaria incidence of the State.

Malaria is primarily a rural disease.

In the rural districts control of malaria by elimination of the breeding places of the Anopheles mosquito is a much more difficult matter—on account of the large production areas involved and the scatter of population. It is also to be remembered in this connection that malaria is primarily a disease of people in poor economic status. In other words, the per capita costs increase, the per capita wealth decreases, and this method of control becomes impractical.

In selected areas it will be found that Anopheline control by means of drainage will at the same time effect an agricultural benefit; the malaria problem is the direct result of poor farming—neglect of proper soil drainage. Under these circumstances it is usually a simple matter to effect proper solution. Again, undrained borrow-pits along highways and railroad fills, misplaced and blocked culverts, and water impounded for power or fishing purposes often create a problem, so-called "man-made malaria," that can be easily corrected.

On the other hand, when one looks upon the hundreds and hundreds of acres of wet, swampy land in some counties and realizes the costly, large scale drainage operations and maintenance that will be necessary to reclaim this land and effect Anopheline control, the day when malaria will disappear for want of a vector appears only in the dim and far distant future.

This need not discourage us, however. Not so many years ago the disease prevailed over most of the United States east of the Rocky Mountains and south of the Great Lakes. Gradually it is disappearing. The northern border of the malaria belt now runs from Tennessee to southern Virginia. In the west it extends only as far as southeast Oklahoma and the eastern half of Texas. The Mountain and Piedmont sections of the South are practically free from it. Everywhere one meets the same testimony—that the disease is becoming less prevalent and less severe. Cases of hemorrhagic malaria (malarial hematuria) are becoming increasingly rare. The disease is constantly confined within narrower and narrow limits. Figures for the past five years indicate a net decline of forty-two per cent in deaths. There must be a reason or several reasons for this general decline.

In some instances, the decrease had undoubtedly resulted from elimination of the breeding places of *Anopheles*, with the clearing, draining and cultivation incident upon advancing civilization. In others, the disease has disappeared in spite of the fact that *Anopheles* mosquitoes are as numerous as ever. I need only note, as an example of the latter in this country, the observations of Dr. M. A. Barber of the U. S. Public Health Service, on the relative absence of malaria from the Louisiana and Arkansas rice fields where *Anopheles quadrimaculatus* is to be found in tremendous numbers.

It is not intended to minimize the value of anti-mosquito measures. This is the ideal method of attack when and where it is practicable. At the same time it is desired to emphasize the fact that when elimination of the mosquito is impractical, it is still possible to reduce the disease to a very low level, if not to eliminate it entirely.

The factors which tend to cause the disease to disappear even where the *Anopheles* mosquito is relatively plentiful are more or less well known. They are education of the general public regarding the role of the mosquito in conveying the disease so that a constantly larger number take precaution; a more wide-spread and better use of screens; the more intelligent use of quinine—particularly the giving of quinine in adequate doses for six to eight weeks after recovery from the acute attack to prevent a relapse; and finally the gradual rise in the level of physical welfare and of living conditions in this country.

The last named factor is perhaps quite as

TABLE I—The Average Mortality Rate From Malaria in Florida Counties Based on the Five-Year Period 1919-1923.

<i>County</i>	<i>Deaths from Malaria per 100,000 Population.</i>
Citrus	15.3
Taylor	14.3
Jefferson	13.1
Lafayette	12.9
Levy	12.0
Madison	10.9
Jackson	10.0
Hernando	8.8
Leon	8.3
Suwanee	6.6
Sumter	6.4
Gadsden	5.1
Marion	5.0
Calhoun	4.6
Pasco	4.5
Columbia	4.2
Liberty	4.0
Wakulla	4.0
Holmes	3.0
Lake	3.9
Bay	3.5
Washington	3.4
Alachua	3.3
Hamilton	3.0
Putnam	2.0
Manatee	2.6
Polk	2.3
Franklin	2.0
Orange	2.0
Seminole	1.9
Nassau	1.8
Baker	1.8
Hillsboro	1.7
Bradford	1.6
DeSoto	1.6
Palm Beach	1.6
Santa Rosa	1.5
St. Lucie	1.3
Volusia	1.3
Duval	1.1
Okeechobee	1.1

TABLE II—Number of Deaths and Death Rate From Malaria in Florida, 1919 to 1923.

<i>Year.</i>	<i>Number of Deaths</i>			<i>Death Rate per 100,000</i>		
	<i>White</i>	<i>Colored</i>	<i>Total</i>	<i>White</i>	<i>Colored</i>	<i>Total</i>
1919	241	176	417	38.2	53.9	43.6
1920	195	149	344	30.2	44.6	35.1
1921	120	111	231	18.2	32.5	23.1
1922	127	120	247	18.8	39.0	24.4
1923	161	132	293	23.0	37.6	28.4

important as any. It is no new thesis that a poor physical specimen is a good candidate for chronic malaria. Physicians have long realized that the elimination of other physical ailments was necessary to clear up chronic malaria. The lowered incidence of hookworm infection, of tuberculosis and the more adequate treatment of venereal diseases undoubtedly has a direct effect in lowering the number of "carriers" of malaria. Better care of babies and children, better understanding and popular knowledge of nutrition, better habits

of living generally lead to increased resistance. Finally, with the rise in economic status—better food, better clothing, pure water, more comfortable living conditions and more adequate medical attention—it is much more difficult for the parasite to maintain itself.

To be sure it is not an easy matter to better the general living conditions of a population. Happily the trend is already in that direction in Florida. That this will have its effect in a lessened malaria rate is undoubted. Physicians and the more intelligent members of the community can do much to accelerate progress. *Adequate provision must ultimately be made in every county for an organized health agency which will carry on the work of educating the public in general sanitation, in nutrition and the hygiene of living,* teaching them how to screen their houses, how to protect themselves from mosquito bites, to see that adequate medical attention and reasonable freedom from disease is had by all citizens irrespective of "race, color or previous condition of servitude." Even a slight improvement in the general level may be sufficient to bring about reduction and the ultimate disappearance of malaria from a given area.

A VITAL POINT IN THE WAR AGAINST TUBERCULOSIS

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For many years the fight against tuberculosis has been carried on from various angles and must be continued with ever greater effort.

Tuberculosis was known long before the Christian era, although it was then known as phthisis, the present name came into use in the latter part of the 18th century.

Laennec (1781-1826) laid the foundation for our present-day knowledge of the pathological changes due to this infection, while Villemain in 1865 showed by animal inoculation that tuberculosis was caused by a specific organism whether it was tuberculosis of the bones, glands, lungs or other organ.

When Koch, in 1882, announced to the world that the organisms causing this disease had been found he completed the chain of evidence as to the cause of tuberculosis and now it remains for the future to give us a specific remedy such as we

have in antitoxin for diphtheria and tetanus or quinine in malaria.

There is probably no disease that has been the cause of as much research, but as yet the question is far from being solved.

It is not the purpose of this paper to touch on treatment, but it would hardly do not to mention a few of the fundamentals that are so well known as fresh air and rest which have been so effective in the care of cases.

The Life of Trudeau is an inspiration to any one and if there are any here who have not read this autobiography they have a treat in store, for it is a book that all, and especially those interested in this subject, should read.

While we know the cause of tuberculosis, the source and mode of transmission of the infection, and although hundreds, yes, thousands are devoting their lives to the study and prevention of this disease, it still is near the front as a cause of death and only recently was dislodged as the leading cause.

What must we do to reduce the toll of human lives taken in a great measure from early adult life when their power for production should be at its best, for surely this needless loss must be stopped?

When a diagnosis is made in the early stages and when the patient can and will follow the advice of his physician a large percentage of cures is obtained, but if the diagnosis is made late in the disease the chances for recovery are greatly diminished. Surely an early diagnosis is a prime essential.

It is a well-known fact that those affected with the pulmonary form of the disease expell tubercle bacilli in the sputum, and this is well known to all but not every one is careful to protect others at all times by covering the mouth and nose when coughing or sneezing, but these acts also may carry the infection to others and every one, whether tubercular or not, should cover mouth and nose every time he coughs or sneezes.

Some years ago a tubercular patient who always protected others by the use of gauze before his mouth when coughing, brought one of those he had used for half a day, and he, by the way, was not an acute case, asking if we would test to see if there were tubercle germs present. His habit was to use a piece of gauze a half day; between times of use it was carried in an envelope in his pocket and at the end of use envelope and gauze were burned.

We placed the gauze in a sterile flask and moistened it with sterile water, letting it stand for about two hours, then we inoculated two guinea pigs with the water. Both pigs developed typical tubercular lesions and we found tubercle bacilli in stained smears from these lesions.

This result being obtained from such a case, how much greater is the danger from sputum infection from frank open cases?

Sanatorium training will make a safe member of society of a tubercular case, for there he is trained not only how to take care of himself but also how to safeguard others, and it is the cases of tuberculosis that are responsible for a great majority of new cases, a smaller number obtaining their infection from tubercular animals.

If with the knowledge of the cause and the availability of early diagnosis we have made but little headway in the fight against tuberculosis, there certainly is some reason why we have failed to prevent the tremendous loss of health, happiness and life, to say nothing of the economic loss to the world.

It seems to the writer that the most vital point in this warfare is education, not merely the chance to learn but the real education that is put across so it reaches the people and really gets action.

Our citizens must be educated to understand that the physician can make a diagnosis long before the laboratory is able to find the bacilli. It is because of this fact that the laboratories of the State Board of Health refuse to give the results of sputum examinations to patients for, if we did report to them all, too many would accept a negative report as proof that they did not have the disease when, as a matter of fact, they might have fairly well advanced cases. The laboratory can only find the bacilli when the case has gone on to the point of breaking down of the tissue and the discharge of the bacilli into the air passages.

Our citizens must be educated to realize that any persistent cough should be attended to and that a thorough examination of the lungs should be made.

Our citizens must be educated to realize that there should be sanatoria for both early and frank open cases of tuberculosis and that it is better that these two classes of cases should be in separate institutions.

Our citizens must be educated to realize that, while tuberculosis is not inherited, children

reared in homes where tuberculosis exists are in direct contact with the infection and at the time when they have had not chance to develop an immunity, therefore there should be a place where such children can be cared for instead of allowing them to become infected.

Our citizens must be educated to realize that even those who are apparently well may, as a matter of fact, be on the direct road to a serious condition and that periodic complete physical examinations are an excellent insurance.

Our citizens must be educated to realize that while these items set forth above will cost money such expenditures will in the long run constitute a good investment, not only in the saving of lives but in the saving of money as well.

COMMUNITY HEALTH AND THE PHYSICIAN

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What interests does a physician have in community health and how can he be of service to his community?

It has often been said that the doctor works against his own interests. Sure, he tries to save his patient and to keep him well. Health boards try to prevent community sickness and if they do so there is less exercise for the healing arts of the doctor.

The public expects interest of the physician in community health. He has been made a privileged person. He is qualified by the State to practice his healing arts and is under obligation because of this qualification to report births, deaths and communicable disease. Too frequently these are the only public health functions he enjoys.

The matter of pure air, pure water, pure food, clean milk, sewage disposal, concurrent disinfection, health centers, infant and child hygiene, vision conservation, midwife supervision, prenatal instruction, venereal prophylaxis, sex education, dental hygiene, mental hygiene, the tuberculosis and cancer crusade and the periodic health examination of apparently healthy people are problems too often intrusted by him to someone else. Sanitation (garbage removal, fly and mosquito extermination) are matters not only for the Board of Health, yet in seven years only

three physicians have inquired or made personal comment of these conditions to me.

Modern health department practice is founded upon a logical basis and the physician with his knowledge is, and should be, the leader in the community in inaugurating the various health activities. A health officer frequently attempts to interest the laity in these movements without explaining them to the community physicians. As a result his course in the matter is difficult and success much slower than if he had the backing of his practicing colleagues.

Each County Medical Society should have at least one and, if possible, several health programs each year. There should be investigations by the society of the health status of the community and committees should be appointed to report upon the advisability of the starting of any new public health enterprises. If the community is well informed that the doctors know what is needed the inauguration and carrying out to a successful conclusion of any proposed public health measure is comparatively easy. Debatable matters should be thoroughly threshed out and settled in the society and a united front made by the society to the public.

In the pursuit of private practice the physician can have a good word for vaccination, anti-typhoid inoculation and toxin anti-toxin. These are proven preventives, yet the public does not take kindly to them because of the minor personal inconvenience attending them at times.

"Health Weeks" for the public can be put on by a county society. The best speakers of the society can give talks on diet, exercise, constipation, blood pressure, prenatal hygiene and care of babies. The public is anxious to acquire more knowledge of sex hygiene, tuberculosis and cancer prevention. Tickets to these lectures can be sent to patients without being unethical. People appreciate a personal interest as they are generally more or less friendly with their physician.

The women's clubs of Florida are receiving literature on the yearly health examination of healthy people. The county society can secure information and blanks from *The Journal of the American Medical Association*. This is a purely medical proposition, but it is far-reaching and the community doctors should take the lead.

The health department budget of the community should have the approval of the county society. The health officer should have their confidence and support. If he has not the confi-

dence of the profession his work will be seriously handicapped. Public health should not be made a football of politics to be buffeted about at the will and whim of petty politicians and should receive the united and whole-hearted support and assistance of the medical profession.

HEALTH EXAMINATION

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The periodical health examination has been so popularized by official and volunteer health agencies and insurance companies that the physician is being called on with increasing frequency to examine and advise people who are not ill in the usual sense of the word, but who seek to know whether there is any latent or incipient disease that can, if recognized and treated in time, be cured or held in abeyance.

Taking stock annually, from infancy to old age, is perhaps as pertinent to the life and success of an individual as it is to a business venture and just as likely to forecast and forestall bankruptcy.

The need of these examinations is emphasized by the large proportion of defectives found in representative groups of persons who have been examined. At Framingham, Mass., out of 4,000 examined, 77 per cent were found to have defects and even a higher percentage of defects was found in large groups examined in New York and Philadelphia. One-third of the drafted men were rejected and 47 per cent were defective, and these were men in the prime of life.

The perfect human is indeed a rare being.

Most people consult a physician because they are ill, and the nature of their illness can be detected very often if at all, only after the most painstaking investigation; even then there is sometimes a disagreement among imminent diagnosticians. Certainly no less care and skill will be required to detect incipient diseases. The time has gone by when a doctor could listen to a patient's complaint, look at his tongue and feel his pulse, then announce his diagnosis. Such a diagnosis would be just as unscientific and inaccurate in a birthday examination as in the case of a sick person. The physician owes it, not alone to the person who seeks his services, but

equally to himself, to make the examination as complete and accurate as his training, experience and equipment enable him to make it, for if one remedial defect is overlooked, it may shorten the life of the person examined, a responsibility no man would care to have.

Family and personal history, including diseases of childhood and other previous illness, are just as essential a part of the health examination as of any other. Information about personal habits of rest, exercise, eating, drinking, the use of drugs, narcotics and nostrums, is also worthy of attention, likewise knowledge of the candidate's living conditions. Is the home properly ventilated, heated, lighted and screened? Is the humidity of the air maintained in heated rooms during winter? Is there an adequate supply of good water? Are human excreta and other wastes properly disposed of? Has the person been immunized against smallpox, typhoid and diphtheria? All these are certainly pertinent questions.

The patient should be weighed and measured, his normal weight and his percentage of over or underweight determined. If necessary, advice should be given concerning diet, and the functional activity of the endocrine glands should receive consideration.

The possibility of venereal infection or sequelæ should be considered, the blood pressure should be taken, hemoglobin estimated and urine examined. The heart and lungs should be examined.

Infants and small children should be examined once a month and with special reference to normal increase in length and weight and the functions of skin, muscles, kidneys and bowels. The mother should be taught how to keep baby free of colic, diarrhoea, scurvy and rickets.

Children of school age may well be weighed and measured each month and inspected once or twice a year for detection of disease of eye, ear, nose or throat, skin, heart or lungs and dental caries. The possibility of incipient tuberculosis in youths and young adults should ever be borne in mind, while persons in the later years of life must be studied with a view of detecting and preventing the degenerative diseases of heart, kidneys and respiratory organs, also cancer and diabetes. In short, the life extension examination should be sufficiently extensive to detect any of the diseases ordinarily expected in people of the age, color, sex, habits and environment of the candidate. It may well follow the plan of a

properly conducted life insurance examination or that to which the army officer submits each year. If well systematized, it need not take over one-half to one hour.

The expectant mother may not well be overlooked in the discussion of health examinations. The menace of nephritis is well recognized, but other diseases affecting both mother and child should receive more attention, among them, venereal diseases.

The doctor himself is perhaps as prone as anyone to neglect his health. He, of all people, should go to a competent colleague and have a complete inventory of his mental and physical assets as well as liabilities.

This article has been written with a full knowledge that each candidate for examination will present a problem different from all others, and no attempt has been made to lay down any hard and fast rules for guidance of the examiner. It is the hope and belief of the writer that the medical profession will agree upon a minimum standard of procedure and prepare an outline to serve as a guide in making the examinations.

BIRTH REGISTRATION

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By the time this article is published or very soon thereafter, you will have full information regarding the outcome of the birth registration test in Florida. It is rather difficult to write a paper on this subject on the very eve of the Government test. While we know that the Florida birth records are not one hundred per cent complete, a great deal of work has been done along the lines of birth registration, and we are optimistic as to the outcome of the test which will be started the first of August.

Those physicians in this State who are so splendidly co-operating in the reporting of births are to be congratulated. Better co-operation from the physicians is being observed now than at any time since the enactment of the Model Vital Statistics Law. This activity in the filing of birth certificates, promptly, on the part of the physicians is certainly a mark of progress in this State.

The Vital Statistics Law in Florida, which is known as the Model Vital Statistics Law, was

prepared after twenty (20) years of experience, and is recommended as the best and most practical known to the Government. This law was passed in Florida during the year 1915 and went into operation in 1917.

The number of births received has increased each year for the past seven years with the exception of the year 1922. Just why the birth records for 1922 did not show an increase over 1921 is more or less of a speculation. It was during the year 1922 that the first birth registration test was inaugurated in Florida, and it is claimed that any registration test has a tendency to increase registration for that particular year or period. However, the results after the test of 1922 did not substantiate this idea. Nineteen hundred and twenty-one shows more births registered than in 1922, and 1923 shows more births registered than for any year in the history of Florida. The year 1924 has started out as a record-breaker with eight hundred (800) more births registered for the first four months than for the same period of the previous year.

The following table shows the total number of living births registered each year for the past seven years, and also the number of white babies as compared with the number of colored:

	Total	White	Colored
1923	23,221	15,614	7,607
1922	21,973	15,274	6,699
1921	22,074	15,221	6,863
1920	19,540	13,541	5,999
1919	18,653	12,863	5,790
1918	18,141	12,628	5,513
1917	17,921	12,701	5,220

The graph shown below indicates the number of births registered each year, 1917 to 1923, inclusive:

The following table shows the number of births and birth rates per thousand (1,000) population, by counties and by color, for 1923:

Counties	Total		White		Colored	
	Births	Rate	Births	Rate	Births	Rate
0. State	23,221	22.2	15,614	22.0	7,607	23.1
1. Alachua ...	646	20.4	392	22.9	254	17.4
2. Baker	151	25.5	120	27.2	31	20.5
3. Bay	323	25.7	242	25.4	81	26.6
4. Bradford...	136	19.0	98	†	38	†
5. Brevard ...	184	18.7	114	16.3	70	24.2
6. Broward ..	179	28.0	109	24.8	70	35.2
7. Calhoun ...	225	24.1	174	25.5	51	20.1
55. Charlotte ..	55	19.7	44	†	11	†
8. Citrus	94	18.0	58	21.5	36	14.2
9. Clay	105	18.7	70	19.7	35	16.9
62. Collier*	....	....	....	....	....	....
10. Columbia ..	308	21.6	185	25.4	123	17.6
11. Dade	1,652	31.1	920	24.7	732	46.0
12. DeSoto ...	189	22.9	152	†	37	†
56. Dixie	14	7.3	14	†	0	†
13. Duval	2,703	21.2	1,610	21.3	1,093	21.0
14. Escambia...	1,080	20.2	818	21.4	262	17.1
53. Flagler ...	36	13.6	22	13.7	14	13.4
15. Franklin...	108	20.2	55	19.1	53	21.3
16. Gadsden‡	562	23.4	202	21.8	360	24.4
57. Glades ...	56	18.7	51	†	5	†
17. Hamilton...	171	17.3	108	19.3	63	14.8
58. Hardee ...	249	23.7	235	†	14	†
63. Hendry*	....	....	....	....	....	....
18. Hernando..	73	16.1	54	19.8	19	10.4
59. Highlands..	96	19.6	78	†	18	†
19. Hillsboro ..	2,362	22.9	1,966	24.5	396	21.3
20. Holmes ...	227	17.1	213	17.3	14	14.3
21. Jackson ...	689	21.7	393	21.0	296	22.8
22. Jefferson ..	361	24.8	71	17.8	290	27.5
23. Lafayette ..	124	28.7	115	†	9	†
24. Lake	340	24.4	237	23.6	103	26.5
25. Lee	201	18.8	173	19.2	28	16.3
26. Leon	412	22.8	100	17.0	312	25.6
27. Levy	198	20.0	126	20.6	72	18.2
28. Liberty ...	122	23.9	82	29.0	40	17.5
29. Madison ..	355	21.5	168	20.9	187	22.0
30. Manatee ..	299	17.8	197	†	102	†
31. Marion ...	504	21.0	248	22.4	256	19.7
32. Monroe ...	394	20.2	309	20.3	85	19.6
33. Nassau ...	204	17.6	106	15.6	98	20.2
34. Okaloosa...	233	24.0	190	24.3	43	22.0

FLORIDA
NUMBER OF BIRTHS REGISTERED



Counties	Total		White		Colored	
	Births	Rate	Births	Rate	Births	Rate
54. Okeechobee.	52	19.6	51	21.7	1	3.3
35. Orange ...	616	27.2	474	28.9	142	22.8
36. Osceola ...	145	16.2	117	15.5	28	20.1
37. Palm Beach	490	21.1	329	20.3	161	23.1
38. Pasco	172	18.6	147	20.1	25	12.7
39. Pinellas ...	550	17.4	489	18.4	61	12.0
40. Polk	1,171	26.7	945	27.9	226	22.5
41. Putnam ...	349	23.1	200	23.9	149	22.2
42. St. Johns...	268	18.9	174	19.2	94	18.3
43. St. Lucie...	280	28.5	203	27.3	77	32.3
44. Santa Rosa	310	21.8	249	22.2	61	20.6
60. Sarasota ...	97	18.4	80	†	17	†
45. Seminole...	310	24.8	164	24.3	146	25.4
46. Sumter	131	15.9	91	15.0	40	18.2
47. Suwannee..	398	19.7	257	21.0	141	17.6
48. Taylor	176	13.9	141	18.8	35	6.7
61. Union	106	19.9	83	†	23	†
49. Volusia ...	537	21.2	344	20.9	193	21.7
50. Wakulla ...	100	19.1	44	15.2	56	23.8
51. Walton ...	270	21.5	209	20.8	61	24.1
52. Washington	273	21.0	204	20.9	69	21.2

*Organized during 1923 from Lee County.

†Population by color not available.

‡State Hospital inmates included.

Dade County has the distinction of showing the highest birth rate of any county in the State, which is thirty-one point one (31.1) per one

thousand (1,000) population. Lafayette County comes second with a rate of twenty-eight point seven (28.7) and St. Lucie third with a rate of twenty-eight point five (28.5). Dixie County shows the lowest birth rate of any county for 1923, which is due to a certain extent to the fact that it was difficult to secure anyone who could conveniently act as local registrar. This necessitated the changing of local registrars a number of times during the year. Another difficulty in Dixie County is, that the population is under two thousand (2,000) and very much scattered. A new local registrar has been appointed in the main district of this county, however, and we are expecting the records to be much more complete next year.

The birth rates for the calendar year 1923 are shown geographically in order that the rates in the State may be studied by counties and by groups of counties. The rates have been divided into six groups: First, those counties having a birth rate from 0 to 17; second, 17 to 19; third, 19 to 21; fourth, 21 to 23; fifth, 23 to 25, and sixth, 25 and over.

STATE BOARD OF HEALTH
BUREAU OF VITAL STATISTICS
JACKSONVILLE, FLORIDA

1923
BIRTH RATES
BIRTHS PER 1000 POPULATION

RATES	LEGEND.
00 16.9	
17.0 18.9	
19.0 20.9	
21.0 22.9	
23.0 24.9	
25.0 31.0	



It is interesting to note a classification of the physicians who attended the twenty-three thousand two hundred and twenty-one (23,221) births last year.

The total number of physicians reporting births during the year was one thousand and forty-five (1,045) and the highest reported by any physician was one hundred and ninety-two (192). One hundred and fifty (150) physicians reported only one (1) birth last year, one hundred and thirty-six (136) physicians reported two (2) or three (3) births, two hundred and seventy-two (272) physicians reported five (5) to nine (9), two hundred and ninety-seven (297) physicians reported ten (10) to twenty-four (24), one hundred and twenty-seven (127) physicians reported twenty-five (25) to forty-nine (49), thirty-one (31) physicians reported fifty (50) to ninety-nine (99), one (1) physician reported one hundred (100) and another reported one hundred and one (101) births.

As to the number of births attended by physicians or midwives, it is interesting to note that fifty-nine and three-tenths (59.3) per cent of all the births registered last year were attended by physicians, and thirty-eight and five-tenths (38.5) per cent by midwives.

Among the white population eighty and eight-tenths (80.8) per cent of the babies were attended by physicians, as compared with sixteen and three-tenths (16.3) per cent by midwives. This ratio has been mentioned because of its bearing on the maternal death rate. We will not at this time discuss the need of education and supervision of midwives, as it would lead to a long discussion.

Data compiled for death rates of mothers from childbirth reveal some important and serious facts. Last year, in Florida, two hundred and eighty-seven (287) mothers died from childbirth, which is equivalent to a rate of twelve point eight (12.8) per thousand (1,000) live births reported. In the United States Registration Area for the year 1922, the death rate from puerperal causes as published by the Bureau of the Census was six point two (6.2). The separation of white and colored gives us a better comparison in this State. One hundred and sixty-four (164) deaths occurred among white women in Florida, equivalent to a rate of ten point five (10.5), as compared with a total of one hundred and twenty-three (123) colored with a rate of sixteen point two (16.2). This question was not brought

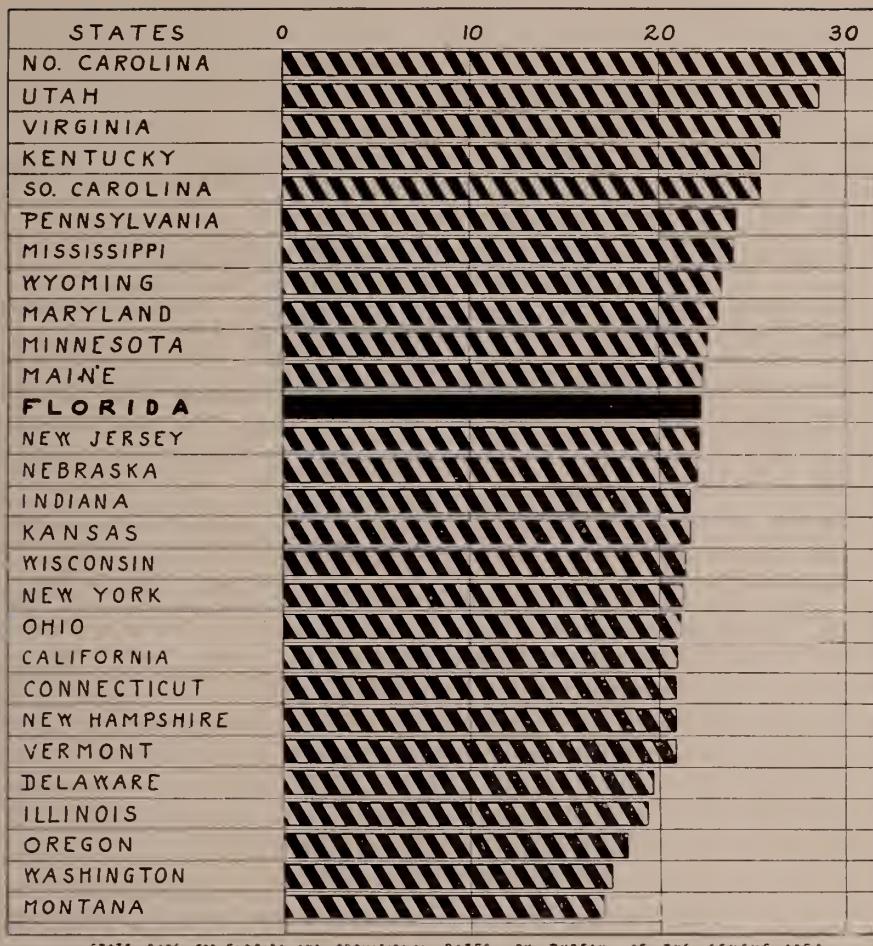
up with a view to opening a discussion but rather to show the importance of birth registration as a factor in the unit of measure. The need for work as well as results obtained is influenced by birth registration.

You will note that all standard rates of deaths from puerperal causes are based on the number of births registered. If physicians fail to report births it is a reflection on their community as well as the State, owing to the fact that the death rates from these causes will show higher than they really are and would mislead rather than assist. The death rate in Florida from the puerperal state, is we believe, higher than is necessary. While we will not at this time draw conclusions as to the particular lines of endeavor that should be undertaken in order to rectify this condition, we appeal to the medical profession for cooperation in reporting all births in order that our standard of measure may be an authoritative guide.

The latest figures available from the Bureau of the Census, showing birth registration by States is a table of provisional figures published for the calendar year 1923. The birth rates for the twenty-three (23) States now in the Birth Registration Area were published and the following graph has been prepared to show where Florida would stand, provided the States was among those now in the Registration Area for Births. You will note that only eleven (11) States show a higher birth rate than Florida, while sixteen (16) States show a lower rate: (See p. 75.)

This illustration certainly looks favorable in the face of a birth registration test in this State. Every indication points to success as to our being able to show ninety (90) per cent completeness in birth registration. It is advantageous for any State to be accepted into the Birth Registration Area of the United States, as it will standardize the birth records, giving a great deal of publicity by sending the records in many publications from the Government to all parts of the world. The fact that a State is accepted into the Registration Area for Births makes the records more comparable with other States and other localities, as a certain standard of efficiency has been reached by all States represented in this Area.

Many authorities claim the infant mortality rate of a city, county or State is a fair indication of its sanitary condition. The infant mortality rate represents the number of deaths of infants



STATE RATE FOR FLORIDA AND PROVISIONAL RATES BY BUREAU OF THE CENSUS, AREA
FOR BIRTH REGISTRATION OF THE US (EX-MASS, MICH AND R.I.)

under one year of age per thousand (1,000) live births reported.

It is not necessary for me to take the time of the readers of this journal going over conditions causing infant deaths as that is a question with which you are familiar. One important factor, however, I would like very much to bring to your attention and that is, complete registration of all births that occur in your practice. It is to be regretted that there are still a few physicians in our midst who do not realize the importance and value of a birth certificate, or the great contribution the profession is rendering to the protection of public health by promptly filing birth certificates. If the birth certificates are not all filed it is a reflection on a community aside from losing a valuable legal record. Inasmuch as the total number of births is used as a basis for figuring infant mortality rates you may readily see that the more births that are reported the lower the infant mortality rate will show.

Dr. J. S. Sweeney has said, "Besides affording a means of computing the infant death rates and

the crude birth rates, the births offer another most interesting use. If one takes only the birth rate over a period of years and finds that it has been continually increasing, he is very apt to conclude that the particular population in question is growing accordingly. This is not necessarily true. Further, if the birth rates of some of the countries are compared there is found that some of them present comparatively high rates while others are relatively low. Upon this knowledge one is apt to infer that the country with the highest birth rate is the country that is increasing its population the most rapidly. Again, this is not always true. Putting it another way, increasing birth rates are not necessarily synonymous with proportionately increasing populations. The reason is obvious—the populations showing the highest birth rates may be also manifesting the highest death rates (which incidentally is very often the case). Therefore the excess of births over deaths is the true measure of the natural growth of a population, and not the crude birth rate."

"The natural increase of a population may have some very important meanings. Certainly it is a good measure for comparative studies of populations. It is an index to the innate biological soundness of any population and insofar is it a very significant measure. For example, it might be very profitably employed in selecting immigrant races. What races are the fittest, biologically? By studying the natural increases of the different races one could safely say which ones showed the greatest survival value. This, however, would be under their own environments. But take the foreign stock of this country. How do their natural increases compare? There is a difference in them. It has been shown that some foreign stocks show remarkable adaptive qualities while others remain low in the scale of natural increase (unless amalgamation takes place). It is interesting to note in passing that the natural increase of the foreign stock in this country, taken as a whole, is greater than that of our own native stock. Is this an interesting and important fact to know? Again, through the births we can study the interesting phenomenon of differential fertility. Today, there is much interest being manifested in this phenomenon, especially in some of the European countries, notably England, and in this country to some extent. Those most absorbed in the problem are naturally the eugenists. But if we did not have data on births and deaths, would we be able to know whether or not the so-called upper classes are being gradually outnumbered by the more fertile inferior classes? Does this have an important bearing upon any of our social problems?"

infancy and carrying with it the sum of \$1,240,-000.00.

Fifty thousand dollars is set aside for Federal administrative purposes and for the investigation of maternal and infant mortality. That the sum of five thousand dollars shall be given outright each year for five years to each State accepting the terms of the Act and that the balance of the appropriation be divided among the States accepting the terms of the Act, on the basis of population and granted, if matched by the State dollar for dollar.

The Children's Bureau was created by Act of Congress in 1912 and the "Investigation of Infant Mortality" headed the list of subjects to be undertaken by it. The need for the Sheppard-Towner Act was clearly shown by the findings from surveys conducted by the Children's Bureau in various parts of the country. These investigations were made by experts and the information compiled shows the conditions in communities such as cities, industrial communities, States having large rural areas, mining and coal districts, with foreign and native born, white and black population.

The high infant and maternal mortality rate; the toll of stillbirths, miscarriages and infant blindness, which shows the lack of instructive care of prospective mothers, or facilities for the proper care of these mothers before, during and after the prenatal and lying-in periods, found by these investigations were conclusive proof of the statement made by Dr. William Travis Howard, Jr., of Johns Hopkins Medical School, that "The prevention and control of illness and death of mother and child are among the most neglected and potentially the most fruitful domains of public health administration."

The idea of Federal assistance to States was not a new one. The Morrill Act of 1862, providing for land grant colleges; the Hatch Act of 1887, establishing agricultural experimental stations; the Smith-Lever Act of 1914, creating the agricultural extension service; the Good Roads Act of 1916, which was extended in 1919-21 and 1922, and the Smith-Towner Vocational Educational Act of 1917, all were giving Federal aid to States for some good purpose and were being successfully administered, and since the need for assistance on a National scale for the promotion of the health of mothers and babies was so apparent, it seemed only logical to resort to the same methods as had been employed for purposes not so important as the sav-

THE SHEPPARD-TOWNER ACT AND ITS RELATION TO THE PHYSICIAN

LAURIE JEAN REID, R. N.,
Jacksonville, Fla.

Director, Bureau Child Welfare and Public
Health Nursing.

Because the Sheppard-Towner Act has been so misinterpreted and misunderstood I wish to give a resumé of the Act before a discussion of it as it applies to the physician.

The Sheppard-Towner Act, which was passed by Congress on November 23, 1921, is an Act authorizing the appropriation of money from the United States Treasury to the several States, for the purpose of co-operating with them in promoting the welfare and hygiene of maternity and

ing of human life, hence the Sheppard-Towner Act with its provision for State aid.

The Children's Bureau of the Department of Labor administers the Act under a Board of Maternal and Infant Hygiene which is made up of the Chief, Children's Bureau (who is executive officer of the Board), Surgeon General of the United States Public Health Service and the United States Commissioner of Education.

In order to secure the appropriations authorized by this Act a State must, through its legislative authority, accept the terms of the Act and designate the State agency, which shall have all necessary powers to co-operate with the Children's Bureau. In States having a Child Welfare or Child Hygiene Division in its State Department of Health, the administration of the Act shall be through such Division. The governor of any State may accept the terms of the Act until such time as legislature shall convene, when legislature must ratify the terms of the Act.

The most frequent objections to the use of this Federal money by States have been:

1. Federal interference in the planning and carrying out of State work.

2. The possibility of children being taken from their home for treatment or any other reason by employees working under this Act.

That these statements are incorrect can be clearly seen from the wording of the Act itself:

Except, Sec. 9, Page 4: "No official, agent, or representative of the Children's Bureau, by virtue of this Act have any right to enter any home over the objection of the owner thereof or to take charge of any child over the objection of the parents or either of them or of the persons standing in *loco parentis* or having custody of such child. Nothing in this Act shall be construed as limiting the power of a parent or guardian or person standing in *loco parentis* to determine what treatment or correction shall be provided for a child or the agency or agencies to be employed for such purpose."

Section 8, Page 4: "Any State, desiring to receive the benefits of this Act shall, by its agency described in Section 4, submit to the Children's Bureau detailed plans for carrying out the provisions of this Act within such State, which plans shall be subject to the approval of the Board. * * * If these plans shall be in conformity with the provisions of this Act and reasonably appropriate and adequate to carry out its purposes, they shall be approved by the Board and due notice of such approval shall be sent to the State

agency by the Chief of the Children's Bureau."

Reports of activities and financial statements properly audited by the State Treasurer shall be forwarded to the Chief of the Children's Bureau on request.

Now, as regards the application of this Act in Florida. Governor Cary A. Hardee accepted the terms of the Act for the State in 1922, pending session of legislature.

State legislature convened in 1923 and by official act under Chapter 9186, Session laws of Florida, 1923, ratified and accepted the terms of the Sheppard-Towner Act in what was known as House Bill No. 637 and made provision in the appropriation for the State Board of Health for a sufficient amount of State funds to match the entire Federal appropriation. This means for Florida that \$5,000.00 will be given the State each year for five years and that the sum of \$11,531.72 will be set aside from the State appropriation for the State Board of Health to match a like amount from the Federal Sheppard-Towner fund. This increased appropriation will be available December 1st, the reason being that the State Board of Health appropriation is on a millage basis, derived from taxation, the returns from which will not be available for use until December 1st.

An erroneous idea which seems to have gained credence among some people that the Sheppard-Towner Act fosters birth control, has had a great deal to do with objections which were made to the passage of this Act. Nothing could be further from the intent of the Act, since every clause and provision is for the saving and protection of infant life and not for its destruction.

The criticism has been made that if this work was carried on in the State, it would mean constant interference with physicians' cases, but after one year and a half, there has yet to be the first complaint made from any physician in the State to this Bureau.

When the work was inaugurated in 1922, the plan was to cover the State as often as time and personnel would permit, by counties, systematically, with the following work: Supervision of midwives, educational work with mothers, baby health conferences where examination and advice would be given, and birth registration.

1. Previous to this time midwives had been working without supervision or instruction of any kind except in rare instances where some little instruction was given by health officers. The objective in the work with the midwives is the

elimination of those women practicing midwifery who have passed the point of acquiring proper methods through classes and a study of the "Manual of Instruction for Midwives"; the instruction and supervision of those who are teachable to the point where they will recognize their limitations and know what to do to safeguard the lives of the cases they handle. A simple equipment which they are obliged to carry will, if properly used, aid materially in preventing infection and the prohibition of the use of drugs will help to prevent some of the tragedies, of which we constantly learn in going about the State.

2. Realizing that we will never have lowered maternal and infant death rates until we can have mothers properly educated for motherhood, the work with mothers has been directed along the following lines:

The prenatal care of the prospective mother which includes instructions in simple English regarding diet, clothing, exercise, bathing, care of the breasts and the danger signals of pregnancy. Greatest stress is laid on the need for a physical examination by a competent physician as soon as the pregnancy is discovered, with return visits at intervals to insure proper care. This the mother is taught to do whether she is to be delivered by physician or midwife, and in many instances where the midwife has been employed previous to this instruction, women have employed physicians for delivery. The need for the monthly examination of urine with specific instructions regarding kidney complications, which would necessitate the immediate care of the physician, is also stressed. The proper preparation of a home for delivery is taught to groups of women in the home by the method of Neighborhood Institutes and also the preparation and home sterilization of the necessary supplies for mother and baby. The District Nurses from the Division of Maternal and Infant Hygiene, Bureau of Child Welfare, conduct these Institutes.

The care and feeding of the young infant is taught with emphasis on the care of the eyes, cord, and diet, the proper care of the mother's breasts and the methods to be employed to insure breast feeding. The methods of preparation of modified feedings is also taught with both fresh cow's milk and canned milk, both dry and condensed, so that people in the rural areas may know the proper preparation of whatever supply is obtainable. Mothers are taught the care of the well baby and instructed in the proper method of procedure should the baby become ill, remind-

ing them that while neighborly advice may be given with the greatest kindness, that sick babies require a physician's care immediately if they are to be safely brought through the period of early infancy and that only where a physician's advice is not obtainable, is other advice to be taken.

3. Baby Health Conferences are held in counties and communities from which requests come and where sufficient interest is shown by those who could help put over the work. At these conferences, babies are weighed, measured and a physical examination made by a physician. The services of local physicians have been gratuitous for these examinations and the State Maternal and Infant Hygiene Nurses have, in each instance, remained in the district following the examinations for a sufficient length of time to make home follow-up visits of every case where defects were noted to advise the parents. Reports from these examinations have come to us from month to month from physicians telling us of cases that were still being brought from the rural districts to the towns for corrective care.

4. In order to assist the Bureau of Vital Statistics, which has not a field force, in the counties where birth registration was low, the Maternal and Infant Hygiene nurses have carried on this work as part of their regular activities, visiting the Local Registrars, calling on doctors and midwives and checking up, generally, on the birth registrations. Florida should be in the Birth Registration Area as well as parents being made to understand the value of birth registration to their children.

All this work, of necessity, cannot be continuously taught in any one community because of lack of personnel, but the reports from one end of the State to the other, with very few exceptions, show the unqualified approval of the medical profession and of the general public where the work under the Sheppard-Towner Act is being carried on. When we will have reached the far edges of the rural districts with instructive care for mothers for both themselves and their babies, and have convinced the general public that health pays and that proper care for mothers during the prenatal, natal and lying-in, and postnatal periods by competent physicians, who realize the value of proper obstetrics, is a community and world asset, we will have gone far in the elimination of the untrained midwife and the lowering of the maternal and infant death rates.

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FLORIDA AND PUBLIC HEALTH

With this issue of THE JOURNAL we present to our readers a series of articles pertaining to the immense problem of "Public Health."

There was a time when the medical profession was all alone in its efforts to combat disease and prolong the span of human life. It is most gratifying that this condition of affairs is fast disappearing and the profession is enlisting an army of laymen anxious and eager to serve in the ranks. The campaign against preventable disease and for the prolongation of life is well under way. Members of the medical profession are specializing in the study of Public Health work, legislative bodies of nation, State, county and municipality are enacting laws for the betterment of health conditions, civic organizations of various types are interesting themselves when called upon to carry on propaganda, and the whole mass of the people will now give an ear to such propaganda where a few years ago little if any attention was paid to the activities of those interested in this work.

It is doubtful if any State in our Union can profit to the same extent as can Florida with her Public Health problems well under control. At one time seriously handicapped with a high mortality and morbidity rate from such diseases as the typhoid and malarial fevers, a high morbidity rate from hookworm—resulting in a lowered vitality of pronouncement, the fear of possible outbreaks of yellow fever, she now emerges from this serious state to be recognized as one of the healthiest portions of the United States.

The State has no fear of an epidemic of yellow fever, our typhoid rate is a minimum one, hookworm is well under control, and our malarial rate is steadily on the decline. There is still work to be done, no section of the country can afford to lag in its public-health work, but with the continued efforts of our State Board of Health and those of our municipal health authorities, there is little doubt that the commercial activities of the State will in no wise be hampered by improper health conditions.

DR. JOSEPH Y. PORTER,

Health Officer of Florida, 1889-1917.

Dr. Porter was selected by the first Board of Health of Florida, appointed by the Governor, to be its secretary and State Health Officer early in 1889. The Board of Health was created by

an act of an extra session of the legislature called for the purpose by the recently elected and inaugurated Governor, Hon. Francis P. Fleming, whose foresight and vision realized the necessity of an agency to conserve the health and lives of the citizens of the State.

The members of the Board of Health are appointed for a term of four years and every succeeding board, for twenty-eight years, wisely selected Dr. Porter as State Health Officer. During this period of service no serious epidemic menaced the health of the people of Florida. He placed the health department of the State on a high plane in that it received the admiration and commendation of not only other State organizations of like character, but of the National Association and the U. S. Public Health Service. He established under his direction the laboratory service throughout the State, a benefit of no meager proportion. He inaugurated a system of district health officers and visiting nurses; established a Bureau of Vital Statistics and placed before the people of the State *Health News*, of all the activities of the Health Department in printed form. He conducted educational instruction to the people of the State through the agency of a health train, visiting every portion of the State with his corps of assistants and instructors and spreading the gospel of "Health" to every community.

Aside from his duties as Health Officer he was, because of his qualifications as a sanitarian and executive, appointed by the Surgeon General of the U. S. Public Health Service as quarantine inspector of the ports of this State, the only office of the kind in this country. This position he held with conspicuous ability for a long term of years. He has long been an ardent advocate of State Medicine and is a past-president of the Florida Medical Society.

FEDERAL MATERNITY AND INFANCY ACT

One million six hundred eighty-eight thousand forty-seven dollars and twelve cents has been expended by Federal and State governments to promote the welfare of mothers and babies under the Federal Maternity and Infancy Act during the first fifteen months following its passage.

This statement is made public today by the Children's Bureau of the United States Department of Labor, in connection with the forthcoming first official report of the administration of

the Maternity and Infancy Act, passed by Congress on November 21, 1921. The report covers the period from March 20, 1922, when the first National appropriations became available, until June 30, 1923, and was prepared by Dr. Anna E. Rude of San Francisco, former director of the maternity and infant hygiene division of the Children's Bureau.

Federal grants to the States during this period for maternity and infancy work totaled \$1,046,523.56. State appropriations made to match Federal funds totaled \$641,523.56. In 1922 payments were made to 43 States, 28 of which matched the Federal grant in full or in part. In 1923, 41 States received grants for maternity and infancy work, 35 of which matched the allotment in full or in part. By June 30, 1923, all State legislatures had met and the appropriation acts passed enabled 40 States to co-operate during 1924, all but Kansas, Illinois, Louisiana, Vermont, Maine, Massachusetts, Connecticut and Rhode Island. By action of its State legislature in July, Louisiana for the first time accepted the Act and will receive its share of 1925 Federal funds.

National administration of the Maternity and Infancy Act is vested in the Children's Bureau and has been carried out, states the report, by the bureau's division of maternity and infant hygiene, the staff of which has consisted of six people—a medical director, associate director, a public health nurse, an accountant, a secretary, and a stenographer. Plans for State work are initiated and carried out by a State agency, usually the child-welfare or child-hygiene division of the State Board of Health, and approved by the Federal Board of Maternity and Infant Hygiene.

The Maternity and Infancy Act has already demonstrated its value, according to the report, in that it has:

"(1) Stimulated State activities in maternal and infant hygiene.

"(2) Maintained the principle of local initiative and responsibility.

"(3) Improved the quality of the work being done for mothers and babies by disseminating through a central source—the Federal Government—the results of scientific research and methods of work which have been found to operate successfully.

"(4) Increased State appropriations with the passage of the act. From the appropriation for the fiscal year 1922, 15 States were able to accept only the \$5,000 unmatched funds. Six States

were able to accept only the \$5,000 unmatched from the Federal appropriation for the fiscal year 1923. All of the States co-operating under the act either have already accepted more than the \$5,000 unmatched allotment from the 1924 Federal appropriation, or will be able to do so. Moreover since the Maternity and Infancy Act became effective, 33 States accepting it have made definite increases in their own appropriations for the welfare of mothers and babies."

State activities under the Act have included the employment of physicians, public health

nurses, dentists, dieticians, health teachers and social workers, on staffs of health departments; education of the public through lectures, demonstration, exhibits, films, etc.; maternity consultations or centers; mothers' classes, correspondence courses and other forms of educational work for mothers; training and supervision of midwives; health conferences; dental clinics; nutrition classes; inspection of maternity and children's homes. Much of the work has been directed toward taken to the rural mother and baby the health facilities which the city mother has had for some time.

Cancer Department

"In the early treatment of cancer lies the hope of cure."

AMERICAN SOCIETY FOR THE CONTROL OF CANCER

HOW TO ATTRACT A LARGE AUDIENCE FOR A PUBLIC MEETING ON CAN- CER CONTROL

Our Society has provided printed lectures and outlines of lectures to be delivered at the public meetings which it has advocated in connection with cancer week activities, but it has hitherto left the actual details of arranging for these meetings to the local committees under whose immediate auspices these gatherings are held.

From time to time, the question has been asked how meetings intended for the instruction of the general public as to cancer control can be made to attract the largest audiences. In order to meet such inquiries, the following suggestions are made:

1. *Auspices.* It is considered best to hold the meeting under the auspices of some existing organization whose membership is liberal enough to attract people in all walks of life, and whose scope is sufficiently broad not to prevent other groups or individuals from attending.

The most appropriate auspices under which to hold a meeting are those of the local branch of the American Society for the Control of Cancer, if there is one. If there is no such branch, a temporary committee can be formed under the authority of the Society's local or State representative. Who this person is can be ascertained by addressing an inquiry to the Society, at 370 Seventh Avenue, New York.

In some cases, it is desirable to hold a meeting under the joint auspices of the Society and

an already existing organization, such as, for example, the Federated Women's Clubs.

It will occasionally be best to hold the meeting under the auspices of some organization not affiliated with the Society.

The principal idea involved is to secure the largest audience practicable, and to make the instruction given as authoritative and helpful as can be. People must come because they want to. And they must not only come, but persuade their friends and relatives to do likewise. When held under the auspices of some already existing organization, a nucleus of interest, and a machinery for extending this interest, will be utilized.

2. *Place of Meeting.* A public hall should be used. It must be a place which any resident of the community will feel free to enter. This is an exceedingly important point, for it is to be remembered that the educational activities against cancer must reach all of the people, as far as this result can be accomplished. On account of denominational differences, it is inadvisable to use a church for this purpose. A high school auditorium is an appropriate place, if it is big enough.

3. *Advertising the Meeting.* Notices should appear in the local papers; announcements should be made at meetings of all local organizations and sent to all associations, clubs, etc., through the mail.

The nurses' associations should be remembered. Do not forget the men. Be certain that the announcement is made at the meetings of the business men's organizations, such as the Rotary, Kiwanis, and Lions Clubs, and at meetings of

labor unions. Above all, notice of the forthcoming meeting on cancer control should be given from the pulpits of all churches.

Be certain that the announcement, whether in the press, from the pulpit, or elsewhere, is given in a short and concise form. If editors, clergymen, or others wish to dilate on the facts which you have given them, they are at liberty to do so; but the information which is sent out should not take more time to read than is absolutely essential.

Be careful to indicate that the meeting is free and that every one is welcome.

4. Arrangements for the Meeting. The meeting should be entirely informal and everyone made to feel at home. There should be no reserved seats. The policy should be, first come, first choice of seats. There may be some instrumental and vocal numbers, an entire band or orchestra if possible. For the vocal numbers, besides the numbers rendered by individuals, it may be possible to have a few numbers rendered by a chorus—perhaps a municipal chorus—or the choir of a local church.

5. The Speakers. There should be more than one speaker. There should be a principal one whose talk should be not less than thirty minutes nor more than an hour in length; preferably three-quarters of an hour. It must be borne in mind that people attending the meeting have come for an evening of instruction. They have possibly refused another invitation, and, if the principal speaker does not talk for a sufficiently long period of time and present helpful facts in an interesting way, the audience leaves disappointed.

There is no great difficulty connected with a good, concise talk on cancer that lasts an hour. It must be snappy and to the point throughout and in the language of the people, but in no wise slangy or trifling. Statistics are boresome and references to the late war inadvisable.

The painful, fatal side of cancer should not be

stressed. It is the hopeful aspect of cancer, when put under competent medical treatment at an early enough stage to permit of cure, which should be emphasized.

It is not desirable that the principal address be read, but rather that it should be delivered without notes. A full lecture which may be read to a popular audience has been prepared by an eminent surgeon and can be obtained from the American Society for the Control of Cancer, if needed, as can a syllabus which may be used as a general guide for remarks which will be instructive and interesting.

Whereas the principal speaker will deliver the address of the evening, the other speakers should not give their talks in a perfunctory manner. They should take their cues from the principal speaker and support him. They should speak for from ten to fifteen minutes each. The speakers may include a city official, preferably the mayor, a prominent clergymen, a representative woman, a representative business man, a representative of the labor unions, and last, but by no means least, a representative of the local press. Good meetings have been held with only two speakers—one to make the opening remarks and the other to give the principal address.

6. After the Meeting. By all means, an account of the meeting should be given afterward on the front page of the local papers. While the meeting may have been well attended and the hall packed, one should not be content with this result if a still better one can be obtained. Many residents of the place will not be present at the meeting. Further, inasmuch as the newspapers go beyond the limits of the local community, many persons outside of it should, through this medium, be given an opportunity to learn the facts brought out at the meeting. News articles can often be written in advance of the occasions which they describe, to the great convenience of the editors.

COMMUNITY ORAL HYGIENE

Latest in the series of public health studies to be issued by the New York Association for Improving the Condition of the Poor is "Community Oral Hygiene," being a four-year report of a demonstration which the A. I. C. P. has been conducting in the Mulberry district of New York City. In a foreword to the report, Bailey B. Burritt, General Director of the Association, says:

"Communities are only beginning to awaken to their responsibility of providing a complete preventive dental program for school children. New York City, in common with most communities, has lagged behind Bridgeport, Boston and Rochester in providing an extensive dental service for school children. In order to promote this important work the A. I. C. P. has undertaken

an experiment in an oral hygiene program for the children in the Mulberry district in the hope that the results of this experiment might lead New York City and other communities to provide an adequate dental service for school children on a permanent basis."

The report, which was prepared by J. C. Gebhart, Director of the A. I. C. P.'s Department of Social Welfare, points out that it was agreed at the outset that such a demonstration would be most significant if it were confined to children, particularly those of the younger ages, and if the emphasis were placed upon educational and prophylactic work. In general, the policy has been to adopt those features of the work in Bridgeport and Rochester which were suited to the situation in the Mulberry district.

The following steps, arranged in the order of their relative importance, were deemed essential to the program:

1. Prophylactic cleanings at least once a year, and twice a year if possible, for all children in the first five grades of school.
2. Extraction of unsavable and diseased teeth, to put the mouth in a hygienic condition.
3. Prophylactic fillings (to prevent decay) in all first permanent molars and reparative fillings where needed in first molars.
4. Nitrate of silver treatment to arrest decay in deciduous teeth which are retained longest.

The fourth point, that of providing nitrate of silver treatment for temporary teeth, was added later after experience had clearly demonstrated that the treatment of the decayed surfaces of such teeth with nitrate of silver was sufficient to arrest decay and to enable the children to retain them for the proper length of time without imposing the unwarranted expense of placing permanent fillings in teeth about to be shed. While the procedure outlined above was drawn up primarily for school children it has been followed also in the work with children of preschool age.

The work was first begun October 1, 1919, in one of the public schools of the district with a full-time dental hygienist installed in the kindergarten room. In January following, a dentist was secured on half-time. By June, 1920, this work had developed to such a point that a well-trained dentist with broad vision and executive ability was needed to develop the work along sound lines and to keep the staff inspired in their task. Besides the supervisor the staff now consists of two full-time dentists and two half-time dental hygienists.

The plan has been to concentrate efforts in the schools where no work has been done and where work may go on from year to year without interruption. In this way there was definite assurance that the work was being done where it was most needed and where the continuity of the service would enable the A. I. C. P. to secure tangible results.

An extension of the service to pregnant women was begun in February, 1922. The purpose of the experiment was to select a limited number of pregnant mothers, preferably those who were experiencing their first pregnancy, for intensive dental care and instruction in diet and oral hygiene. In this way it was hoped that the mothers would be encouraged to begin early in training their children in the care of the mouth.

The actual improvement in mouth conditions is best shown in the annual survey made by the A. I. C. P.'s supervisor for the purpose of determining in advance the amount of work needed during the year. The children are classified as to those needing extractions and fillings of various kinds and those who need no reparative work. Since the survey is not made at exactly the same date each year, obviously this picture is not altogether reliable; for if the survey is made quite early in the school year, before much work has been undertaken, a much less favorable picture is given than if made later, after many of the worst conditions have been cleared up. In spite of these variations, however, the annual classification of the children shows a steady improvement.

The A. I. C. P. has now made four annual surveys of the mouth conditions of the children of Public School 106, where the most intensive campaign has been conducted. The increase in those needing no corrective dental work and in those awarded diplomas for having kept their mouth clean has steadily increased. There has also been a marked reduction (from 85.4 per cent to 46.4 per cent) in children requiring fillings, for the most part in first permanent molars. While the proportion needing fillings is slightly greater than last year, the proportion needing extractions has been reduced from 40.3 per cent to 32 per cent. This is again a most encouraging sign, for it means that more children have savable teeth than last year, and for such, fillings rather than extractions are indicated. There is also direct evidence that the fillings required are of a far less extensive nature than when the work first began, for in 1920 60 per cent of the

fillings were urgent, while in 1923 only 37 per cent were urgent.

While approximately 3,000 children have been served annually through the dental clinics, approximately 1,200 of this number received intensive care, including extractions, fillings and nitrate of silver treatment. Obviously, the per capita costs for these 1,200 will be much higher than the per capita cost of the total 3,000 served. The practice has been to divide the total annual expenditures by the total children reached to secure the gross per capita cost. Thus, for the first year that complete records were available the gross per capita cost was \$4.17. This item, however, included several expenditures for equipment and educational literature. By the following year the per capita cost had been reduced to \$3.79.

The reduction in cost is due both to an actual decrease in the amount of corrective work to be done and also to the fact that a larger number of children were reached through the prophylactic service, where the cost is less. During the last year the per capita cost had increased to \$3.99. This increase is due in part to extending the service to preschool children, which at first involved considerable loss of time because of unkept appointments. It seems reasonable to conclude that a dental service of this kind costs approximately \$4.00 per child reached. The A. I. C. P. also presents in its report the approximate average cost of particular operations, prophylactic cleanings, fillings, extractions and nitrate of silver treatments.

There are, indeed, few health services, the report points out, which for an average annual per capita expenditure of \$4.00 can show such unequivocal and far-reaching results as those accomplished by this demonstration. The full implications of these results will not be fully realized until oral hygiene is accorded its proper place in preventive medicine. The increase in clean, healthy mouths, the saving of first permanent molars and the reduction in the incidence of dental caries have proceeded during these four years at a rate little dreamed of when the work was begun.

The demonstration has proved that a dental service which is administered as an integral part of the daily school program produces the most widespread and lasting results. Experience has shown that when the dental clinic is in the school building children can be sent directly from the class-room to the dental clinic with a minimum of

waste time both for pupil and operator and with a minimum amount of confusion and disruption of class-room work. The hearty support and co-operation of the school officials in promoting the educational aspects of the dental program could hardly have been secured if the dental clinic were not in the school building.

BIOLOGICAL PRODUCTS THAT MAY BE OBTAINED FROM THE STATE BOARD OF HEALTH

In spite of the fact that the State Health Officer has sent letters to all physicians in the State, that he has published this in *Health Notes* (May, 1922), that we have called attention at medical meetings and that the press has carried the word, still a great many of the members of the profession do not realize just what may be obtained for the protection of their patients.

The State Board of Health furnishes diphtheria antitoxin in 5,000 and 10,000 unit packages for therapeutic use; tetanus antitoxin, 1,500 units for prophylactic, and 10,000 and 20,000 unit packages for therapeutic use; vaccine virus for the protection against smallpox, triple typhoid vaccine, anti-meningococcus serum, Schick tests to determine who is susceptible to diphtheria and toxin antitoxin to immunize against diphtheria. All these are furnished without cost to use for any case.

One question frequently is asked and that is why should the State furnish antitoxin to those who can afford to pay for it? The answer is simple when once it is carefully considered.

The State Board of Health is supported by a tax paid by the citizens of the State. "Those who can pay" are certainly included as taxpayers and the State Board of Health, on account of the volume of material required, is able to obtain the biologics at much less than half the regular retail price of many of the products.

By furnishing the above biological products the State Board of Health saves the citizens of the State the difference between the cost to the State Board of Health and the retail price which last year alone meant a saving of over \$8,000.

The above mentioned products are used in every section of the State, hence the saving is distributed over the State as are the taxes.

There is one other biological product handled by the Board, namely, antirabic treatments, but these are not furnished free except when the

physician administering it certifies that the patient is indigent and that he is receiving no pay for the administration. The question sometimes arises, why should the Board of Health furnish some biological products free and charge for another? and that is a fair question. The answer is that any community can practically control the rabies situation, hence why should those sections not having rabies be taxed for the treatments given to those places that allow the disease to exist. As an illustration of the above I have made a summary of the number of treatments sent to Hillsborough County, Duval County, and the 14 counties west of Jefferson County for the years 1921, 1922, 1923 and the first six months of 1924:

	Hillsborough County.	Duval County.
1921	114	7
1922	91	8
1923	109	50
Jan.-June 30, 1924....	28	80
—	—	—
	342	145
	14 Counties west of Jefferson County.	Gadsden County.
1921	10	8
1922	38	20
1923	20	5
Jan.-June 30, 1924....	10	3
—	—	—
	78	36

In 1921 Hillsborough County was beginning to realize that they had a problem on their hands, but the result of repressive measures did not become manifest until 1924 when they apparently had obtained a real reduction in the number of cases requiring treatment.

The other extreme is shown by the figures from Duval County. After an abnormal number of cases had occurred prior to 1915 an active campaign was carried on for some years to limit the number of cases with gratifying results, but with the reduction of the number of cases public sentiment as to the necessity for continued care became less and the inevitable increase occurred. We hope the peak has been reached and that the active co-operation of the citizens may be secured and maintained and that our children may not be so frequently exposed to this menace; yes, if it will reach those that will not guard the children, that the dogs themselves will not be exposed to the disease, for just as smallpox only follows

exposure to a case of smallpox, rabies only follows exposure to a case of rabies.

It will be noted that of the 18 treatments used in the 14 counties west of Jefferson county 36 of them were used in Gadsden county, leaving but 42 for the other 13 counties during the three and one-half years under consideration.

Rabies has always been an easy disease to control if people try to do so and now there is added a method whereby dogs can be rendered immune by a single injection of virus, this immunity lasting for at least a year.

In order that diphtheria antitoxin may be easily and quickly obtained in all parts of the State certain drug stores centrally located have been designated as antitoxin stations and at these stations diphtheria antitoxin and typhoid vaccine can be secured. *No other biologics are kept by the State Board of Health at these stations.*

Any of the biologics may be secured from the branch laboratories except the antirabic treatments, but any large amount should be requested from the laboratory at Jacksonville, which is the distributing point to the branches and stations. All requests for any of the biologics should be addressed to the laboratory for it is open Sundays and holidays for at least a half day and our mail is opened, while if the request is directed to the State Board of Health it would not reach us until the following day.

We ship biologics by the first mail after receipt of request and desire to give you the most prompt service possible.

Please be definite in your requests. For instance we sometimes receive a message like the following: "Please send vaccine at once." The sender of the message knows if he wants vaccine virus or typhoid vaccine, also if he needs 5 or 500, but we do not know the conditions and are under a great disadvantage. Another common message: "Send tetanus antitoxin." Does the sender wish a 1,500 prophylactic dose or has he a case and needs 50 or 100,000 units?

When wiring or writing for anti-rabic treatments *always state age of the patient and location of the bite or bites.*

A list of stations is appended.

ANTITOXIN DISTRIBUTING STATIONS FOR THE FLORIDA STATE BOARD OF HEALTH

City.	Station.
Apalachicola.....	H. B. Robbins Drug Co.
Arcadia.....	Arcadia Drug Co.
Avon Park.....	Avon Park Drug Co.
Blountstown.....	Leonard Drug Co.

<i>City.</i>	<i>Station.</i>
Bradenton.....	Balis Pharmacy.
Century.....	Century Pharmacy
Chipley.....	Mitchell Drug Co.
Clearwater.....	Morris Drug Store.
Cocoa.....	Hughlett Drug Co.
Dade City.....	Griffin Drug Co.
Daytona.....	Hankins Drug Co.
DeFuniak Springs.	Rexall Drug Store.
Fernandina.....	Horsey's Drug Store.
Fort Meade.....	Langford Drug Co.
Fort Myers.....	Pixon & Schultz Drug Co.
Fort Pierce.....	Silver Palace Drug Co.
Gainesville.....	J. S. Bodiford Drug Co.
Inverness.....	Inverness Drug Co.
Jacksonville.....	State Laboratory.
Key West.....	Key West Drug Co.
Lake Butler.....	Tomlinson Maines Drug Co.
Lake City.....	Columbia Pharmacy.
Lakeland.....	Henley's Drug Store.
Live Oak.....	Sewanee Drug Co.
Miami.....	State Laboratory.
Ocala.....	Court Pharmacy.
Okeechobee.....	Park Pharmacy.
Orlando.....	Evans Rex Drug Co.
Palatka.....	City Drug Store.
Panama City.....	Sims Drug Co.
Plant City.....	Knight's Drug Store.
Pensacola.....	State Laboratory.
Quincy.....	City Drug Store.
St. Augustine.....	St. George Pharmacy.
St. Petersburg.....	Bennett's Pharmacy.
Sanford.....	Mobley's Drug Store.
Starke.....	Mitchell Drug Co.
Stuart.....	Stuart Drug Co.
Tallahassee.....	State Laboratory.

<i>City.</i>	<i>Station.</i>
Tampa.....	State Laboratory.
Wauchula.....	Beson Bros.
West Palm Beach..	Speer's Pharmacy.
Winter Haven.....	S. H. Woods.

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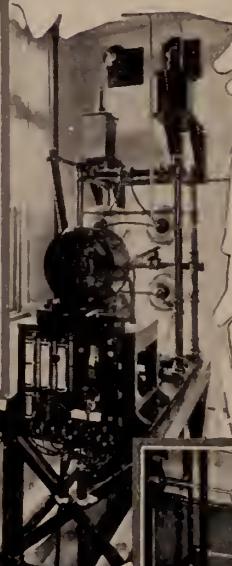
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ORIGINAL ARTICLES

SURGICAL DIAGNOSIS*

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During the past few years we have been graduating from our hospitals more technicians than diagnosticians, and if this is continued, surgery will lose the enviable position won for it by the tireless efforts of a generation.

The leading surgeons in the country today, Horsley, Deaver, the Mayos, Crile and many others, owe their reputations to their diagnostic ability.

The late John B. Murphy, whose reputation as one of our greatest surgeons was not questioned, was entitled to this honor because, first, of his knowledge of surgical diagnosis; second, of surgical pathology; third, as a teacher and, fourth, as an operator. He taught his students that the most valuable and important asset of a surgeon was his ability to make a correct diagnosis.

Today, the American College of Surgeons are insisting, in standardized hospitals, that the records show the pre-operative as well as the operative diagnosis.

Important, as it is, to have an accurate diagnosis, our endeavors to obtain one does not entail injury to the patient, nor involve the loss of the most favorable moment for successful operation while the refinements of diagnosis are being investigated.

As a profession, we are probably less acute in our general observations than was the practitioner of the old school. In his day, everything depended on observation, and apparently no little thing was overlooked, whereas today we are supported by many laboratories of special investigation.

The old saying that more mistakes are made in diagnosis on account of lack of observation than on account of a lack of knowledge, still seems to hold.

There are six common causes of diagnostic mistakes:

1. Incomplete or incorrect case history-taking.
2. Incomplete examination of patient.
3. Ignorance of certain pathologic complexes.
4. Failure to explain the atypical.
5. A plus of laboratory detail and of ultra-modern methods at the expense of sound judgment and good sense.
6. The riding of a hobby.

The basis of a diagnosis is the history and the examination. A careful history, taken properly, letting the patient tell her own story, skillful and sympathetic questioning, exact dates, and little details will oftentimes give us an inkling to the trouble. It should be properly written, properly arranged, events put down in their order and when we have finished we usually have a probable diagnosis. Prominent symptoms should be explained, for example, *pain in abdomen*, where, what kind of pain, dull aching, sharp or shooting, continuous, intermittent, cramp like, etc., etc.

Bleeding from uterus: at menses: is usual amount increasing? Is she flowing between times? Has she missed, has she pains? etc.

All these symptoms should be detailed as they are important in our diagnosis.

A complete examination is the next important step. Here we rely on our old friends, inspection, palpation, percussion and auscultation.

In these days of infection we must begin with the head, inspect the sinuses, teeth, throat, and neck. We must not forget to examine every breast for lumps and we will be surprised how many of these unsuspected tumors are carcinoma.

The abdomen is a most important place for the surgeon. Is the abdomen symmetrical? Are there any elevations or depressions? Is it rigid? Are the muscles drawn tense at any point, as would happen in an acute abdomen? Follow with the penis (oftener a scar will help you later in your final verdict), testicles and rectum. Right here, I wish to say that it seems to me that some doctors do not like to put their fingers into it, yet we all know that our examination is incomplete without it. I have seen sad examples of

*Read before the Fifty-first annual meeting of the Florida Medical Association, held at Orlando, May 13, 14, 1924.

carcinoma that have been treated for months for piles, simply on surmise, no examination having been made. When the abdominal findings are not satisfactory, especially in men, the rectal examination often clears up the diagnosis.

Here I might state also, that the routine testing of the reflexes, more particularly of the knee-jerks, is worthy of insistence.

Palpation is our most valuable asset, and to be able to utilize this to the fullest advantage, demands constant and careful practice.

To be able to see with our finger tips is an art which all of us do not possess and evidently cannot be acquired.

Palpation will detect tenderness, swellings, masses, tumors, rigidity of the abdominal wall, pulsations, movements of gas, fluctuation, etc.

Deaver says that "exquisite tenderness is a more reliable sign of the presence of pus than is a leucocyte count."

Percussion is a valuable adjunct, especially in abdominal diagnosis, presence of fluid, changing position of patient, altering sounds, gas, etc.

Auscultation, when the surgeon can interpret what he hears and can differentiate the abnormal from the normal sounds in the abdomen, is another great asset in our diagnosis.

Increased or decreased peristalsis, absence of peristalsis, tinkling in obstruction is often a serious sign. In fact we have in the abdomen oftentimes signs of extra-abdominal diseases as pleurisy, pneumonia, tuberculosis, syphilis, etc., which can be differentiated by careful physical examination. But, with all the above, we would be unwise to depend on these alone when we have the help of the laboratory, but it is by the correlation of the clinical with the laboratory findings that the laboratory is constantly adding to our knowledge.

But we have to be careful in our interpretation of some of these findings. The results of test meals vary so much in what we would expect to find in certain conditions, as not to be reliable. A complete blood count should be made on all surgical patients and we will often be surprised by finding malaria when we least expect it.

The finding of occult blood in the stomach or feces does not mean anything by itself. It should be our practice to examine routinely the functional ability of the kidneys.

Since the advent of insulin we are able, with the aid of the laboratory, by estimating the blood and urinary sugar, to treat these cases with sur-

gery without more danger than if they had none. But we must not forget the X-ray: here we have an accurate method of diagnosing fractures, ulcers, tumors, abscesses, stones, etc., and this is our most valuable adjunct in clinching our diagnosis.

Assuming that we have made our diagnosis, let us open the abdomen, for instance, and see if we are able to make a so-called operative diagnosis. Here is where we need our knowledge of topographical anatomy of the abdominal viscera, morbid anatomy, living pathologic anatomy and surgical physiology.

Are you able to distinguish the abnormal from the normal? Do you know your landmarks?

In taking out an appendix I have seen operators take up much time trying to find it, when if they knew their anatomy, they would recognize the cecum, ilio-cecal and colic folds and find it quickly.

In operations for diseases of the gall-bladder, ducts, pancreas, etc., after good exposure, it takes all our means of examination to make sure of our diagnosis.

The pre-operative diagnosis of ulcer is confirmed by inspection and palpation. How many of us have opened an abdomen with a pre-operative diagnosis of ulcer, including positive X-ray report, and found none, but probably found a diseased gall-bladder or appendix and by removing them cured their stomach trouble.

Another great help in our operative diagnosis is by means of the frozen section; as this is done while we are operating, we are giving our patient the benefit of every doubt, and when this may save them a radical breast amputation, it should be an essential part of our routine.

This paper would be too long and tiresome should I go into the diagnosing of the post-operative abdominal complications. Suffice to say that these conditions can be pretty accurately determined by careful observation of diagnostic details.

In concluding I wish to repeat what Dr. Strause of Chicago, an internist, once said: "Many acute abdominal conditions present at onset vague symptoms," which is the best reason for deferring "medical treatment" and for watchfully waiting for the change which makes diagnosis possible, and if we accept the dictum that every acute abdominal condition may be a surgical condition, it follows that in all such cases the surgeon should be called in early. While we

believe that the medical man should try to make an anatomical and physiological diagnosis, he should not jeopardize his patient's life by delay in conferring with his surgical colleague during the period of observation.

A good surgeon should have the following qualifications: First, he should be a diagnostician, that is knowing what is the matter with his patient; second, he should possess surgical judgment, that is knowing what to do and when to do it; third, he should have operative ability, knowing how to do it.

DISCUSSION.

Dr. John S. Helms, Tampa:

This is a very large and a very important subject, upon which there have been a great many volumes written, all of which show the extreme importance of it and also its complicity.

Surgical diagnosis is indeed a very important matter from the patient's viewpoint, because oftentimes it saves the patient, when the diagnosis is carefully made, from disaster.

It has been stated that about 80 per cent of all diseases, both medical and surgical, can be diagnosed by the average medical man in possession of the average facilities for making such studies as he is able to make of the case. This leaves about 20 per cent, which require to be studied by men who either specialize or make a special study of the different phases of medical and surgical diseases, or studied by groups of men. And after they have been studied about 15 per cent of correct diagnoses are made, leaving 5 per cent that are practically undiagnosed by all the means that the "teams" or the individual man have been able to bring to bear upon the case.

I am a strong believer in "team" work when it comes to the question of a diagnosis, and this is particularly true in surgical diagnoses. It is very difficult for one man to be able to make application of all the methods that are necessary to make a diagnosis in the obscure case. It is therefore necessary that we bring together and to bear upon the given case a group or a "team," that are able to work out the special phases of the case, in order to arrive at a correct diagnosis.

The treatment of surgical cases, like medical cases, can only be determined upon when one has made a correct diagnosis. I feel that laboratory methods are among our most important methods. We might guess from the history of the case the disease that the patient is suffering from, and our guess in 80 per cent of the cases might be correct.

But even so I feel that this ought to be proven for the safety of the patient by all the means that are available to us, and I think the laboratory is one of the most important factors in determining the correct diagnosis and proving a good guess.

Dr. F. J. Waas, Jacksonville:

As Dr. Helms has stated, Dr. McEwan has certainly covered a very large subject, and a very big one.

The thing that impresses me more about the paper is that it brings out the importance of careful history-taking. I think if we will spend more time with our patients, that we will be better able to figure our clinical findings and try to correlate them with our laboratory findings. I believe in that way we will be able to reach a more or less complete pre-operative diagnosis.

One thing that the American College of Surgeons has done is to stress the importance of careful history-taking. In order to get complete history we have to spend more time with our patients, and our patients are being enormously benefited by it. I think this will help us a great deal in getting more efficient surgery.

Also, the X-ray to my mind is quite an important factor in concluding our diagnosis, especially from a gastric standpoint. We may have the same interpretations by other means, but the applied X-ray man has to be taken into consideration in interpreting X-ray findings from a gastric standpoint. I remember in one of my cases we had a positive diagnosis of gastric ulcer, and in exploring we found a chronically diseased gall-bladder and appendix, and negative gastric findings. I think we should have an interpretation of the findings by the Roentgenologist, because we very often do get a pylorospasm which manifests itself from an X-ray standpoint and is very frequently interpreted as pathology and diagnosed, and then complete our findings by calling upon our surgical intuition or surgical judgment in order to give our patients the benefit and privilege of a successful surgical diagnosis.

Dr. E. H. Teeter, Jacksonville:

In surgical diagnosis we certainly must use our surgical judgment. I have known cases after case that I have seen, that we had had laboratory work done on and all kinds of examinations, including X-ray, that were not operated on as it then seemed unnecessary, but after they came to autopsy we found out that they had the disease that was diagnosed in the beginning. On account

of the laboratory findings and the X-ray, etc., they were not operated on. So I want to emphasize that surgeons with surgical judgment must not let the laboratory and the X-ray put them over too much on the over-side.

Dr. John S. McEwan, Orlando (closing):

I think that Dr. Teeter's last remarks coincide with what I have in mind, and also the remarks of Dr. Helms.

I believe in "group practice" for the reason that we cannot keep up in all branches of medicine because they are getting to be exact sciences. Therefore we must have the help of the specialists, and with their opinion we must make up our own diagnosis. Here is where Dr. Teeter comes in. We ought to have enough surgical judgment to decide ourselves whether or not the patient should have an operation, when he should have it, and what he ought to have done.

A PLEA FOR THE EARLY DIAGNOSIS AND TREATMENT OF PULMONARY TUBERCULOSIS*

HERRMAN H. HARRIS, M. D.,
Jacksonville, Fla.

The reduction of the death rate from pulmonary tuberculosis in the last decade has been most gratifying and gives promise that in the not distant future this disease, like other formidable enemies of mankind, may fall before the tireless sword of science. The progress so far shown has been due primarily, and one might say entirely, to the early recognition and treatment of this disease. In recognition of these facts this plea is addressed to you.

It is stated by competent authority that pulmonary tuberculosis costs the United States over one billion dollars per year. Professor A. Caswell Ellis, of the University of Texas, states that "Three times as many people in proportion to the population have this disease in America as do in England, Scotland, Sweden, Norway or Switzerland."

Since the discovery of the germ by Koch, and with improved methods of prevention and treatment, it has been shown where this knowledge is applied, 79 per cent of the loss from tuberculosis can be prevented.

Since August, 1919, I have examined 3,700 cases of pulmonary tuberculosis. Of this number only 219 were incipient cases. One is amazed at the great number of these, although they presented definite clinical and physical signs of tuberculosis, they had been treated for dyspepsia, anaemia, chronic bronchitis, neurasthenia, anorexia and other ailments. These errors in diagnosis cause the loss of much valuable time and what is still more important permit the infection of the patient's family and close associates. It has been my experience that the rank and file of the medical profession in my part of the State fail more often than succeed in the diagnosis of incipient tuberculosis. Most of the cases referred to me with a diagnosis of incipient tuberculosis were cases which were acute exacerbations of old quiescent lesions.

The detection of early tuberculosis is not a feat requiring the possession of skill or knowledge greater than that possessed by the average physician, but in order to succeed one must use all the diagnostic agents necessary for the detection of other incipient organic diseases.

In no other disease is a careful history more important. The family history should be carefully scrutinized for evidence of the disease either past or present. This disease is not often conveyed by occasional contact, but rather by repeated and intimate association over weeks, months or years, especially during childhood, which I believe to be the period during which by far the greater number of infections are acquired.

The patient's personal history should include such information as the presence of slight and persistent daily oscillations of temperature above and below normal. The presence of a sub-normal morning temperature is as suggestive of tuberculosis as the afternoon rise. The average, present and maximum weights should be recorded. Evidence of haemoptysis, haemorrhage, chronic cough, lassitude in the afternoon, nervousness, which was the most common symptom complained of in my cases, pleurisy, night sweats, loss of appetite and dyspeptic symptoms, are very often found even in very early cases.

Any patient who has a cough lasting over six weeks who is not asthmatic and does not have an emphysematous chest, should be considered tubercular until he can be proven otherwise.

The occurrence of true haemorrhage of obscure cryptogenic origin should be considered of tubercular nature until proof to the contrary is obtained. This is a clinical axiom from which the

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practitioner should never depart, lest he takes upon himself responsibility and meet with grievous disappointment.

Pleurisy, which is not the accompaniment of pneumonia or trauma, is no doubt, in the vast majority of cases, pathognomonic of tuberculosis. Idiopathic pleurisy, in my opinion, does not exist. The physician who fails to properly study repeatedly any case complaining of pain in the chest, increased on deep inspiration, is derelict in his duty to his patient, and often accessory to the infection of the patient's family.

The physical examination should not be of the chest alone, but should include the patient's entire body. It is, however, upon the chest that one should spend most time, for it is here that our physical diagnostic technique will give us most information. The physical examination of the chest to be of value in early tuberculosis must be most carefully and exhaustively made. I have found that next to auscultation, inspection gives the most information, the change in the contour of the chest wall and the movement of the chest during respiration, give evidence very early of changes in the lung and pleura beneath. The affected side shows retraction and respiratory lag very early in this disease. The deepening of the supra-clavicular fossa, together with a noticeable wasting of the shoulder girdle muscles of the diseased side, is observed in many incipient cases.

Palpation sometimes gives information in this stage of the disease. Although the tactile fremitus should be tested over the entire chest, it quite often fails to give definite signs of changes in the adjacent lung.

Percussion I believe to be a diagnostic procedure which requires much training and precision in order to detect slight changes in lung density. The accurate outlining of the apiceal isthmus above the clavicle and the determination of the posterior excursion of the bases of the right and left lung, during deep inspiration, is information of much weight in making the diagnosis. No chest examination is complete without this procedure.

At least one-half of the time given to the physical examination should be spent in auscultation. One should find some area on the chest where the normal breath sounds can be heard. Usually in the axilla over the lower lobes normal vesicular breathing is present even in well advanced tuberculosis. One should come back to this area often, in order to get the pitch as the musician strikes

his cords. By this method changes in breath sounds are easily detected. One should then go over the entire chest for changes in intensity of the spoken and whispered voice.

I leave the consideration of rales for the last auscultatory measure. The presence of showers of small crackling rales in either apex which occur localized and persist after deep inspiration, expiration and cough, are in my opinion pathognomonic of pulmonary tuberculosis. If these rales can be heard during quiet breathing the disease has probably passed beyond the stage of incipiency. Auscultation of the chest, without having the patient inhale, exhale and cough is not complete, for in the early cases this is necessary in order to bring out the small moist rales. It will be found that it is advisable to examine the chest both in the early morning and during the afternoon, as quite often rales are present in the morning hours which cannot be found during the remainder of the day. Probably due to the increased respiratory activity.

There are certain areas of the chest to which we should give our greatest attention as there are regions of the lung which seem especially vulnerable to this disease. The alarm signs in pulmonary tuberculosis begin to show themselves earliest at the apex of the lung. More often on the right than on the left. The apex corresponds anatomically to the inner portion of the supra spinous fossa. In this region one should look carefully for the auscultatory signs indicative of changes in the lung tissue. Such as altered vesicular murmur, increased vocal resonance, small crackling rales, etc.

Chauvet regards specifically as the alarm zone, a line drawn from the spinous process of the seventh cervical vertebra to the projecting inner tuberosity of the spine of the scapula. It is here on one side or the other we shall most often find our earliest signs. For in this area the apex of the lung is separated from the ear by the least amount of soft tissue, and its relative narrow shape brings tissue changes in its center closer to the observer's ear. This is the point of election for the most careful examination of the lung in incipient tuberculosis.

In a certain percentage of cases it will be necessary to repeat the physical examination to assure oneself that nothing has been missed. If the physical examination has been carefully and exhaustively made there is no other procedure which will give as much diagnostic information.

The finding of tubercle bacilli in the sputum of a patient suffering with incipient tuberculosis is definitely proportional to the diligence of the search. One sputum examination even if carefully made is of little value. One should not stop at less than six. The more the better. I have found them after twenty sputum examinations. It is certain that the absence of bacilli in the sputum of one suffering with incipient tuberculosis is not disproof of the existence of the disease.

Perhaps no single procedure has rendered more assistance in the early diagnosis of tuberculosis as that of the X-ray. Especially is it of great value in doubtful cases. That there is a very early impairment of alveolar permeability to the X-ray is no longer a question for debate. The information obtained from the fluoroscopy is not as reliable or useful as that obtained from the stereoscopic plates, but much can be learned from the fluoroscopy alone, if the examination is made during inspiration and during cough. Normally clearness of the lung tissue increases during inspiration and cough. The air is seen to be passing into the alveoli. Continuous absence of this increase in clearness of the apex during cough or inspiration is a typical, and perhaps one of the earliest, signs of apical disorders.

The treatment of early tuberculosis is most satisfactory in those cases where complete co-operation is obtained. Rest is by far the therapeutic agent of greatest value and should be complete in any case showing temperature at any time in twenty-four hours. It should also be insisted on in those cases not showing a rise in temperature, if other evidence of toxemia or activity exists.

Hypernutrition ranks next in importance and the diet should contain food easily digestible and nutritious. The calorific value of which should be at least one-third greater than the actual calculated nutritive needs of the patient. Fresh air and sunshine, while being secondary in importance to rest and proper nutrition, are measures of no slight value in the management of early tuberculosis. Probably no greater experiment in the history of the treatment of tuberculosis has been tried than that which has been carried out by our government in the care of great numbers of veterans of the World War found tubercular. Hospitals and sanitariums have been established in nearly every part of this country. The careful statistics gathered after four years tell us that patients do as well in one part of the country as

in another, other things being equal. If patients improve by being sent away it is because they go away to get well and give themselves up entirely to the task of regaining their health, which a great many are unwilling to do when at home, where old long-established habits are persisted in. I do not believe there is the slightest value in climatic treatment other than that occasionally obtained by a change of surroundings, doctors or medicine.

There are some factors in the treatment of tuberculosis about which I feel certain. The longer in beginning treatment the longer for restoration to health, and the greater the probability that the individual will spread the disease.

In conclusion I wish to make these emphatic statements: The physical examination, if it is worth anything, will take time. It is not too much to expect the general practitioner to be capable of careful inspection where inequalities of posture, musculature or expansion are discernible; to be so adept in percussion that moderate changes in resonance and basal expansion of the lungs yield him the needed information; to know how and where to elicit rales and whether they mean tuberculosis; to be honest, thorough, suspicious, zealous; to examine sputum frequently; to know the absence of the bacilli is not disproof of active tuberculosis, and if he waits for their demonstration he loses most often his patient's chance of arresting the disease. He should avail himself of the X-ray both as a diagnostic and prognostic agent.

Surely no man will find early tuberculosis unless he searches for it.

DISCUSSION.

Dr. L. W. Cunningham, Jacksonville:

The X-ray has played a considerable part in chest diagnosis in many types of lesions, as the lungs, with an air-filled content, give excellent material for negatives of marked contrast and detail. In tuberculosis it has great value in that it indicates the location, the extent and character of the lesion in most instances and is of marked help in the early diagnosis of the disease.

To digress a moment, I would like to stress the importance of technique. Screen study, or the use of the fluoroscope, has a distinct value but should be an adjunct to stereoscopic plates or films. To depend on screen study of the chest is to invite disaster and failure and discredit a valuable agency. Stereoscopic films made so rapidly

that the heart shadow appears as if carved out must be secured in order that the most minute lung markings be seen. This means an exposure time of one or two-fifths of a second. Flat films have value but it is limited, and only stereoscopic films should be considered. Improvement in all kinds of X-ray apparatus, including films and intensifying screens readily allows the rapid type of exposure necessary to the best results.

We are interested in the early diagnosis of tuberculosis of the lungs, and we have a valuable agent but one that is not infallible. We must not fail to impress upon you that collaboration with the internist in the closest manner will bring the best results. You must not depend on the X-ray film alone to make your diagnosis. Much argument and futile discussion has occurred many times over a period of years as to the relative value of the physical and clinical study compared with the X-ray findings and this must not be done. They must not be compared but must be made to fit into one another and thus make a real diagnosis. Collaboration between the internist and the roentgenologist wherever it is followed gives good results. We have studied many hundred of lung examinations with Dr. Harris and it is seldom that we disagree except minutely.

Next we would stress the point that this is not an easy method. Many other conditions produce changes in the lungs that at times are similar to tuberculosis. One in particular must beware of those patients who work in dust of different types, also after influenza, and some types of metastatic malignancy.

In the study of films of the early cases of tuberculosis one has to look for minute changes in the lungs, and some of the slides we will show you will appear to you as normal lungs. This is due to the fact that only in the stereoscopic films can many of the small lesions be seen. But the fact that the slides show so little or no actual X-ray pathology shows the necessity for stereoscopic study. To revert to technique, we would say that no set number of films should be depended upon, but both antero-posterior and postero-anterior sets should be made, and, if any doubt exists, more films should then be made to confirm or disprove some doubtful shadow. Often reporting some doubtful shadow will be of help in the further study of the patient.

We chiefly depend upon changes in the lung itself, although coincident changes in the pleura have diagnostic significance. Changes in the pleura alone are not usually typical but are sug-

gestive evidence, especially if noted at the apex. Changes in the movement of the diaphragm are of distinct value and often lead one to a more intensive study of that side and the finding of evidence of an early lesion. Changes in the lung picture occur more rapidly than one would expect and I have seen marked and extensive acute mottling disappear in a few weeks. It then suggests re-examination at proper intervals as the serial study gives records of the changes and will help to indicate repair or progression of the disease.

We would make the point that Dr. Harris has noted that apparently early cases are not early, but one quite frequently finds evidence of old lesions and an exacerbation acute in type of them or infection of acute type at another point. At times the film study may have prognostic value, but one needs to be more than cautious in this phase of the work.

We would note in closing that the film quite often shows a much greater extent of disease changes than the physical study suggests and this has been a uniform finding of X-ray workers.

We would stress again the value of the X-ray and that the best results will be secured where the internist and the Roentgenologist work side by side and check their work.

Dr. R. H. McGinnis, Jacksonville:

Too much emphasis cannot be given to the keynote in Dr. Harris' paper on the early diagnosis of pulmonary tuberculosis, namely, suspect it, a good, painstaking history of the patient's past illness, environments, exposure to the disease, length of time of exposure, and a careful, thorough physical examination of the entire body, especially the chest.

One examination may not be sufficient. One should be perfectly satisfied with his findings before reaching definite conclusions. While inspection, palpation, percussion and measurements are useful, more time should be devoted to auscultation, as by auscultation evidence is obtained that cannot be ascertained in any other manner. I am not satisfied that the X-ray study gives much definite information in the early stages of the disease as it so admirably does after fibrous changes have taken place in the lung tissue.

One should not be satisfied to pronounce a person free from tuberculosis after one negative test of the sputum. If one is suspicious repeated examinations ought to be made. I had a case a few years ago whose sputum test became positive at the forty-eighth examination. This patient

died one and one-half years later of pulmonary and laryngeal tuberculosis.

Climate, *per se*, has no curative effect on this disease.

Dr. T. Z. Cason, Jacksonville:

I think we should all feel grateful to Dr. Harris for his paper, and for the fact that he has the nerve to say what he thinks on the subject of the diagnosis of tuberculosis. He has said some things that needed saying, and should have been said long ago.

I agree with most of the facts he has stated in his paper. I do think that it is within the province of the general practitioner and within the possibility of the general practitioner to diagnose early cases of tuberculosis. I do think, however, that it does require extraordinary skill to diagnose a great number of incipient cases of tuberculosis. I say that with some timidity. I understand clearly that you are sometimes censured for not making an early diagnosis—but that censure does not necessarily mean that you have not tried. Those of us who do a great deal of chest work, realize that from day to day we have to keep our ears tuned to hear little fine sounds in the lungs in order to make a definite diagnosis. We also realize that from day to day we have to distinguish between certain abnormal and normal sounds, and unless you are in a position to do a great amount of chest work, and to do it daily, I think you will therefore fail to diagnose a large per cent of the more difficult cases.

I certainly agree with what Dr. Harris has said on the question of making a great number of sputum examinations, and putting your best effort into the diagnosis, history, X-ray findings, etc. But let me warn you to be very careful of your X-ray examinations. Now, I think the X-ray men will bear me out in this. There is no one who is quicker to ask for an X-ray than I, but mind you, do not be misled by your X-ray examinations, either in a negative or a positive way. In one of my early cases, I remember, the X-ray man gave me a negative diagnosis, and the patient died in two weeks, and we found multiple disease of the lungs, intestinal tract, spleen, etc., all tuberculosis. I have certainly appreciated that warning. There is something about the X-ray that I cannot explain. There is nothing wrong with the X-ray man at all; he did his work well and did it thoroughly. However, we must not be misled by the X-ray examination—we must be careful.

Last week I was in Atlanta at the National Tuberculosis Association. During their discussions it was brought out that there are a large number of cases having a diagnosis of tuberculosis that are not tuberculosis. An analysis of cases showed over 200 cases that had had hemorrhages, positive sputum, and various symptoms, and yet were not tuberculosis. One man made the statement that he thought he had more undiagnosed cases than he had diagnosed, and for that reason I am sounding that note of warning.

There is one thing in Dr. Harris' paper that I do not agree with, and that is the question of pleurisy. I do not know what he calls idiopathic pleurisy, but I am convinced that there are a great number of cases of pleurisy that are not accompanied by tuberculosis. The old idea that every case of pleurisy is accompanied by tuberculosis will not stand. We saw that after the flu epidemic, when a great number of cases were diagnosed T. B., some of them being pleurisy with effusion, yet on being followed up for a long period of time there was no evidence of tuberculosis. I think we have had two hundred cases that had pleurisy—different kinds of pleurisy—that were not tuberculosis.

It seems to me, then, that one of the things that you must do—that we must all do—is to learn to recognize these cases at once and then keep them under observation, watch them carefully and hold them in suspicion before we make a definite diagnosis one way or the other. We must learn to recognize these cases the moment they come to us and then thoroughly study the patient.

You must remember this point: It behooves us to very carefully follow up cases, make a diagnosis, and do not let him go too long, and yet be exceptionally careful and not make a diagnosis when he is negative.

Dr. L. M. Anderson, Lake City:

I am very sorry that I did not hear all of this paper. I am deeply interested in the subject of early diagnosis of tuberculosis, and I also think that the X-ray is of great assistance to us in making that diagnosis. But I hope that each and every one of us in pronouncing a diagnosis of tuberculosis in its early stages will do it from our physical examination first, and then take up the X-ray afterward.

Now, as to rales: Rales sometimes in incipient stages of tuberculosis are very hard to get. It is also pretty hard to get co-operation, or it seems that way to me sometimes with some of my pa-

tients. I agree with Dr. Harris that you are more apt to get them early in the morning, I think. In making that examination, get them to expel air and cough properly.

Auscultation is a hard thing to get. You want a properly built up office to get auscultation—to the exclusion of all other noises and interruptions. And then you want your patient to give his attention to you.

Examination by X-ray: This, as Dr. Cason has told you, will get you a good many things, if we immediately show them to the X-ray specialist. There are a few of these cases that you get, if they are old ones, where long walks cause a cough as well as other symptoms, but if given medication for a short time just clear right up.

Now, I fully agree with Dr. Harris in this matter, that rest and sunlight, especially—as much sunlight as you can get—is the proper thing for the treatment of tuberculosis. Also we find, or at least I do, but still a good many of the physicians do not agree with me, that I get some benefit from lime, creosote and iodine. I have not been without, I don't think in thirty-five years, the care of a T. B. patient. But the reason that we general practitioners do not get any better results, I think, sometimes is because we cannot control our patients. If we could put them in a hospital and keep them there, we could supervise their activities, especially the amount of work that they do, and such things as that. Now, I am not going to tell you all about some patients that I have. Some of them are living—I will say that much.

Another reason why we do not make a diagnosis of tuberculosis early: I would like to ask Dr. Harris how many people come to him voluntarily in the actual stages of T. B. Lots of them have pain in the chest, but what per cent of the patients come to you in the early stages with loss of weight, temperature and such as that?

Dr. M. H. DeBoe, Key West:

I want to express my appreciation toward Dr. Harris for presenting such an excellent paper on this most important subject. I want to agree with him in the importance of early diagnosis of tuberculosis, and the use of every means possible in making that diagnosis.

There is one other point which is elicited by ophthalmoscopic examination. That is a dim line of light which is seen running along the arteries of the retina. This sign is not demonstrable where the pupil is dilated by a mydriatic,

it is only seen through a normal pupil by direct ophthalmoscopy.

Dr. T. A. Neal, Orlando:

There is just one feature that I want to discuss, and that is the positive statement the Doctor made, if I understood him correctly, in regard to persistent fine rales after deep inspiration followed by expiration and cough being always a sign of tuberculosis. I have seen one or two cases in which I made a diagnosis of tuberculosis, where this existed with still other signs, that were not tuberculosis. Both had loss of weight.

I have one little patient now under observation that I may refer for diagnosis before long to another physician on account of an uncertain kidney condition. He has these chest symptoms which will persist on you, giving all of the characteristics of tuberculosis; however, it seems that this child has a Bright's disease. Has both kinds of granular and hyaline casts, and small amount of albumin in urine. And I am inclined to think that instead of tuberculosis this is a kidney case.

Dr. W. L. Hughlett, Cocoa:

I am sorry that I failed to hear the first part of Dr. Harris' very valuable contribution. I am interested in this subject and would like to ask him to make us clear on the temperature symptoms in the early diagnosis of tuberculosis. I have been on the job a long time and I have found the temperature chart to be a most valuable aid in the selection of these cases for treatment.

Dr. J. G. DuPuis, Lemon City:

In calling attention to the early diagnosis and treatment of this disease, two things clearly remain to be ascertained, that have not been mentioned. Dr. Harris has brought out the methods of diagnosis and treatment of these patients, but what are we going to do with them after they return home? We diagnose them, as he stated, and keep after them until they are classified. Watch out for them if they are T. B. patients. What are we going to do with them after they are found? The average T. B. patient is poor—or they are in our county, and I believe they are in other counties—and what are poor people to do? Why are they poor? So many people become poor because it is hard to find work when their diagnosis is known. Therefore the question: What are we to do with them when we have found them, classified them, and found that they are poor people?

Now, the question of treatment: We say they need sunshine and rest, especially sunshine. Give them sunshine. We say we are going to take care of the T. B. people and create a sensation, but when they are poor, how are we going to do it? It is pretty hard to solve that problem.

Some have tried to prevent the occurrence of this disease in the growing child. That must be done through nutrition. Going back to the fundamental of society, the problem of producing that nutrition lies within the work of our agricultural department. If this can be proved—if it can be shown that our diseases are referred back to the nutrition of our youth in the beginning, I believe that will help us.

I spoke of classifying these people. I believe you doctors will appreciate just what we mean by classifying these people. Thank you.

Dr. J. W. Taylor, Tampa:

There is just one point that I would like to mention, and that is the importance of the laryngoscope.

I believe all the laryngologists will bear me out in the opinion that we rarely if ever see a case of tubercular laryngitis in the early stages. When we see that it is usually after a chronic aphony has set in. Therefore, I believe that every internist should be equipped with a laryngoscope and use it in his cases, because it is only in making an early diagnosis in these cases that we are able to control the laryngeal condition. And in seeing these cases, the normal and the abnormal, why we soon learn to detect the beginning break in the larynx. This is the point I would like to bring out in making that statement about the laryngoscope.

Dr. J. H. Randolph, Jacksonville:

In the early diagnosis of tuberculosis, there is just one point which seems to me is likely to be overlooked, and which will have to be read between the lines in this paper possibly, although I believe Dr. Harris, himself, has had it fully in mind all of the time.

He speaks of the variation in temperature, which he thinks is of great importance, such as the slight variation in temperature which these patients with the early stages of tuberculosis often present. A little later on he also speaks of the neurasthenia or the nervous symptoms which some of these patients present and nothing more. Now, if we will combine these two fea-

tures that he has mentioned, and keep in mind always the possibility of an early tuberculosis in the patients who come in complaining of nervousness, and in whom you find these slight variations of temperature, and nothing more perhaps, and then make that same careful complete examination which he has urged upon you to determine it, you will probably save a patient from later coming down with a serious and incurable condition.

Too often these cases we all know have functional nervous symptoms, and the patient is told that the temperature that he has is just a nervous temperature or nervous disorder. That is an all too common mistake among all of us in the general practice throughout the State. We send the patient off to rest and take recreation—a very happy solution possibly for the patient, and also for the self-satisfied physician, who feels that he has done the right thing for the patient. Only a few years later, or possibly a few months later, that patient is taken down with early pulmonary symptoms and someone discovers consolidation and disease.

Dr. Thomas Truelson, Tampa:

The diagnosis of tuberculosis is comparatively easy—that is the average case of tuberculosis is usually quite easy.

Now, percussion is a gross method of examination. It does not get you much information. Anybody with a little skill can demonstrate three or four different things on the chest. Practically disregard percussion, it won't get you much.

Auscultation is the thing that most of us have to rely upon. If you will examine the corresponding sides of the chest, and compare your findings at corresponding points on the other side, and if you detect a difference you have made the first stage of a physical examination. Detect the difference and then you can investigate further. If both sides, over back and front, from corresponding points sound alike you have gained a good deal of information. If you detect a difference on one side, or if there is a pathological lesion on that side, you have got to have increased resonance on that side. Detect the first change in studying the chest, and then resort to some of the other methods of investigation and you will have accomplished a great deal. This is the first stage in most chest work. Examine the corresponding sides, find out whether they correspond in sound both as to auscultation and res-

onance, and then it will be easy for you to distinguish between them.

Dr. H. H. Harris, Jacksonville (concluding):

Before concluding this paper, I want to thank all of the doctors for their very liberal discussions of the paper. This is a very interesting question and would probably take up the whole session if we would let it.

I cannot answer all of the points brought out in the discussions by the different men, or that I would like to say something about.

I feel somewhat like Dr. Cunningham, that it is not given to all of us to have perfectly good hearing, and to be what we might call wizards of the stethoscope, but I do feel that it is given to every one to be honest and when we get where we cannot make a diagnosis honestly and intelligently it behooves that man to send him to someone who can make a diagnosis, after one has failed. We should all realize and know when we are not able to get a diagnosis and should not let the patient suffer but send him to somebody who can make a correct diagnosis. Dr. Cunningham spoke about so many cases being called tuberculosis which are not. I will admit there are quite a few; especially after the epidemic of influenza in 1918 and 1919, we had a great many cases that were very baffling, but they were more than anything else due to chronic influenzal infection which had gotten in the lungs. I fear also that for every case that is called tuberculosis and is not tuberculosis, there are fifty cases called something else that are tuberculosis. I feel that he is almost neglectful of the number of cases that are being called something else—that is when we state our cases frankly.

As to auscultation: A sound-proof room does not make concentration. Now, my office is an outside office in the St. James Building. It gets the shock of big trucks during the day and there is a park within a hundred yards where the band plays all winter—all kinds of jazzy tunes, and I know that I am conscious of everything that is going on. However, I believe that you should bar out all ordinary noises close to you that are

apt to distract you. Learn to concentrate on your patient.

As to what per cent of the cases come to me with a diagnosis of early tuberculosis, I could not give the exact per cent, but it would be very small. The majority of cases that I have with early tuberculosis are cases that came to me for something else. I don't make a diagnosis of a man until I know something about him. I sit him down and talk to him first—ask him all about his life, that is, all about his habits, and his work and his family, and finally get down to symptoms, and then down to a physical examination. I spend most of the time on that, and when I get through the examination I make a diagnosis. If that patient comes in making a statement something like this, "Doctor, I think I have T. B.," I show him out. I don't want him to influence me in my opinion. Don't want to make a diagnosis before I get to it. Let the diagnosis be the last and not the first thing.

Now, as to the question of temperature in tuberculosis. That is a very variable thing. I think that temperature above or below normal is a very valuable sign in early tuberculosis. As I stated before, I think the morning subnormal temperature is as characteristic as the slight rise in the afternoon. It is a strange thing about tuberculosis, like toxemia. You will see one patient who is shot all to pieces, with no temperature above normal. And you will see another one with physical signs that show a small area, in the apex, probably not more than one or two inches in size, and that individual will be running 102° temperature, and having night sweats. We do not know why but we know it is so. It may be different kind of treatment and it may be the individual, himself. I had one patient, a young fellow with a total disability, drawing \$150.00 per month from the U. S. V. B. His chest is shot all to pieces. There are a great many rales in all portions, clear down to the base. But that man has no rise in temperature, and furthermore has no cough. Just because a patient has no cough, just remember he can still have tuberculosis and have it pretty bad.

A STUDY OF THE MECHANICAL AND CHEMICAL PROPERTIES OF THE SAND SPUR FROM THE STANDPOINT OF THE ENDOSCOPIST AND SOME OBSERVATIONS ON ITS CLINICAL MANIFESTATIONS IN THE LARYNX.*

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The marvelous development of the science of endoscopy has been due to the fact that its different phases have been so closely studied. In recent years investigators have endowed this branch of surgery with pathologic observations which accentuate the importance of the specificity of certain types of foreign bodies in the air passages. Jackson's investigation of the peanut as the etiologic factor in the production of a syndrome to which he has given the term arachidic bronchitis stands out prominently in this phase of bronchoscopy. Such research is conclusive evidence that the study of a series of foreign bodies of the same type and physical characteristics in the air passages will aid the endoscopist in arriving at some valuable conclusions relative to them.

The purpose of this paper is to discuss the sand spur as a foreign body in the larynx. It is an interesting fact, as shown by the literature, that the sand spur infrequently runs "that gauntlet consisting of the epiglottis, upper laryngeal orifice, ventricular bands, vocal cords and hecic blast" to become a foreign body in the lung. In my experience this has been true, and as a result of this fact my observation will be confined to the reaction of the laryngeal tissues to this type of foreign body. When considered from the point of frequency as an intruder in the air passages, a survey of the literature reveals relatively few references to it aside from merely reporting its extraction and perhaps localization.

In my experience with the sand spur as a foreign body, some facts were observed which aroused sufficient interest to stimulate some definite study as to the chemistry and mechanical properties of this noxious weed. When one considers the fact that there have been reported in the literature eighty-five cases in which the sand spur has occurred as a foreign body, it would appear that some investigation as to its inherent and mechanical properties would be justified.

To Linnaeus belongs the credit of naming the plant as it is known to botanists today. The species which I have seen as a foreign body in the air passages is the *Cenchrus tribuloides* (Fig. 1), which is commonly known as sand spur, sand



Fig. 1. *Cenchrus tribuloides* L. x 1-3. (After Youngken and LaWall.)

bur or cockspur. It is an annual weed belonging to the family Graminæ. It is widely distributed, occurring from Ontario and Maine to Florida, westward to Minnesota and south to Colorado and Texas. In the far South near the coast it is a very common plant and may be found almost anywhere, on lawns, in cultivated fields and waste places. This grass thrives in sandy soils, and since it roots at the nodes or joints it frequently forms dense mats. The fruits of this grass are spiny burs, and it is to these that the endoscopist who resides in a section of country where this plant is indigenous and abundant has his attention frequently called.

It is a fact recognized by those who have carelessly handled this troublesome weed that the trauma or wounds caused by the spines of the involucle of the *Cenchrus tribuloides* are usually painful and long-continued. Observing persons familiar with the sand spur state that the wounds from the younger spines are more painful than

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the injury from the spines which have reached the stage of maturity. Personal experience with the sand spur before studying it from the standpoint of a foreign body in the air passages led me to believe that there was some irritating principle about the spines of the *Cenchrus tribuloides* that other spines did not possess. After encountering it a number of times as a foreign body in the larynx and observing a similar and very definite characteristic type of inflammation in each case, I was prompted to undertake an investigation of the minute structure, histology and chemistry of the sand spur with the idea of determining the cause of the clinical manifestations.

A review of the literature on *Cenchrus tribuloides* was therefore undertaken. Apparently no work was published on the histology of these plants until 1892, when Gayle published in the *Botanical Index* a brief article in which he described and illustrated the lower portions of the spines of the fruit. He states that "the spines are barbed, that each barb has within it a cavity terminating, in the direction of the point, in a narrow tube which is filled with a substance having a light purple color." He adds that in all probability this substance, which is of a highly irritating nature, may be assumed to be the direct cause of the inflammation of the wound.

To ascertain whether there is any toxic principle in the substance which has a light purple color described by Gayle, and to determine the cause of this definite type of inflammation, an exhaustive study of the plant under discussion was deemed essential. At the request of the author, Dr. Charles H. LaWall and Dr. Heber W. Youngken of the Philadelphia College of Pharmacy and Science consented to undertake the investigation of the sand spur. At their request, two pounds of sand spurs were gathered and submitted to them. For the information on the anatomic and microchemic part of this work we are indebted to Dr. Youngken, while Dr. LaWall investigated the chemistry of the mature burs with contained fruits.

While the histology of the sand spur may be principally of academic interest, it has its important bearing clinically when studied in the role of a foreign body in the air passages, and it is worth while here to call attention to certain facts pertaining to its minute anatomy.

Dr. Youngken states the burs of the *Cenchrus tribuloides* present a somewhat rounded polygonal outline when observed on transverse sections and exhibit numerous outgrowths in the form of long attenuated spines (Fig. 2).

The spines originate early in the development of the bur as outgrowths of its tissues. In their



Fig. 2. Burs of *Cenchrus tribuloides* L. (After Youngken and LaWall.)

young condition they are often purplish red or bluish, but gradually lose their color and become yellowish brown. They are for the most part flattened and conical in shape, with sharp attenuated distal ends. They are clothed with hairs (Fig. 3) in their proximate third and exhibit

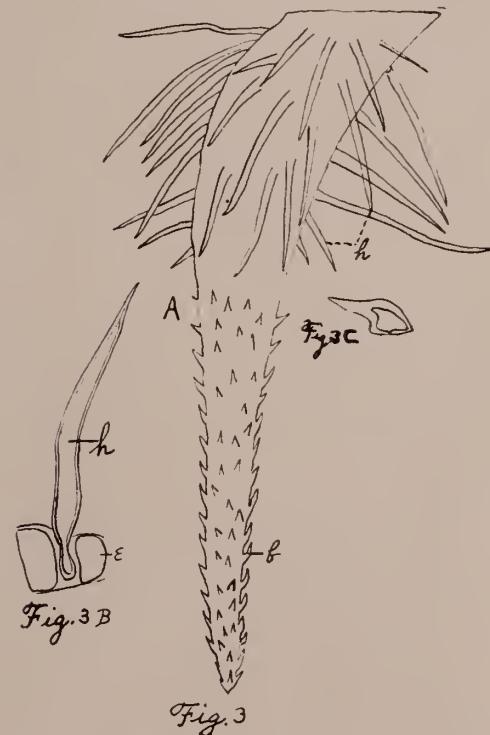


Fig. 3. A. Spine of *Cenchrus tribuloides* L. showing barbs (b) below and unicellular hairs (h) above. B. Portion of epidermis of spine showing insertion of hair (h) between epidermal cells (e). C. Barb enlarged. (After Youngken and LaWall.)

sharp recurved barbs for the remainder of their length. The barbs readily break at their tips when pressure is applied to them. Each spine shows an outer epidermis, which consists of long and short cells. The purplish red to blue color of the parts of the younger spines is found to be due to anthocyanins present in the cell sap of certain epidermal cells, fibers and barbs.

The surface and longitudinal sections of the younger spines show purple and blue cell sap. These elements were examined microchemically by Dr. Youngken, and the substance of his report is as follows:

When thin sections were placed in a ten per cent alcoholic solution of ferric chlorid the originally purple or blue cell sap became red in about one minute. When concentrated hydrochloric acid was added, the color disappeared in a short time. When other similar sections with cell sap originally purple to blue were mounted in a 1:5 solution of silver nitrate, the purple and blue contents became black. These tests show that formates may be present in certain cells of the epidermis, as well as in a number of sclerenchyma fibers and barbs of the younger spines. Dr. Youngken further states that the surfaces and longitudinal sections of mature spines show the elements to be entirely devoid of the purple and blue cell sap contents noted in the case of younger spines.

Dr. LaWall, after examining the mature sand spurs pulverized in an iron mill to a fineness of a No. 60 powder, states that after they have reached the stage of maturity they are not actively toxic.

For a further analysis Dr. Youngken placed the burs in a weak alkaline solution for several hours and subsequently examined their spines microscopically. He reported that the epidermis appeared broken and the sharp pointed sclerenchyma fibers more or less detached.

The author regards himself as fortunate in having had a sufficiently broad experience with the sand spur in the larynx to be able to compare its direct effects on the laryngeal tissues with that of other foreign bodies of different physical characteristics.

The endoscopic picture of those cases in which the foreign body had been in the larynx for more than twenty-four hours and the prolonged hoarseness after removal were the two factors which led me to endeavor to isolate some inherent property in the sand spur and suggested the study of its mechanical effect.

An analytical survey of ten cases in children in which the sand spur had been in the larynx for more than twenty-four hours presented a concrete picture in many respects resembling laryngeal diphtheria. The children were more or less prostrated and gave evidence of a toxemia which was manifested by a temperature varying from 100° F. to 102° F., by a pulse ranging from 100 to 140 and by a mild cervical adenitis. A marked hoarseness and increasing dyspnea were prominent symptoms and in some cases a varying amount of cyanosis was observed. Direct laryngoscopy showed a dirty grayish exudate elevated above the surrounding mucous membrane and the neighboring area to be inflamed and sometimes edematous. In a number of cases the foreign body was recognized with considerable difficulty, because it was obscured by this thick grayish membrane. Cultures taken from the exudate in no instance revealed more than a mixed infection.

Second in importance to this clinical picture was the marked and prolonged hoarseness which persisted for weeks after the foreign body was removed. In two of my cases, six weeks after removal, there was a marked difficulty of phonation and such a degree of hoarseness as might be associated with a laryngeal neoplasm.

After observing this syndrome in my earlier cases I perused the literature on the subject in search of an explanation. A careful study showed no evidence of any chemical work having been done on the sand spur at any time in its history prior to the study recently completed by Dr. Youngken and Dr. La Wall.

Without some consideration of its minute structure, one can hardly appreciate the amount of trauma to which the laryngeal mucosa is subjected when the sand spur with its thirty to forty spines with their retrorse barbs, as illustrated in Figure 3, becomes jammed in the glottis. With the penetration and traumatization of the epithelium, the resistance of the tissues is lowered, subjecting these numerous wounds to invasion by pyogenic and other bacteria. In addition to the laceration of the tissues and the microbial invasion, can also be added the irritation by the formates which occur in the lumen of the barbs of the younger spines, and which may be injected into the wounds upon fracture of the sharp brittle tips of these structures.

Dr. Youngken also calls attention to another factor in the production of this inflammatory proc-

ess due to the sharp sclerenchyma fibers becoming loosened and detached in the flesh fluids.

The prolonged hoarseness which in some of my cases persisted more than six weeks after the foreign body was removed can be accounted for by the fact that these retrorse barbs, as shown in Figure 3, are broken off when the main spine is removed and remain in the laryngeal mucosa for an indefinite time. I examined several of these spines from the sand spurs which I had removed from the larynges and discovered that these small barbs were missing, evidently having been left in the laryngeal mucous membrane.

CONCLUSIONS.

1. The pronounced and prolonged irritative action of the sand spur to human tissue can be explained by an understanding of its mechanical and chemical properties.

2. The early development of an inflammatory exudate when the sand spur is lodged in the larynx is evidence of the marked irritative action of this type of foreign body.

3. The appearance of the larynx in which the sand spur has been lodged for more than twenty-four hours presents a picture resembling laryngeal diphtheria.

4. The penetration and traumatization of the epithelium by the numerous spines of the sand spur lowers the resistance of the tissues and permits the invasion of pyogenic and other bacteria.

5. The amount of reaction of the tissues is increased by the formates, which may act as a mechanical and toxicchemical irritant. These formates are contained in the younger spines.

6. The prolonged hoarseness after removal can be attributed largely to the fact that on removing the main portion of the numerous spines the retrorse barbs are broken off and remain in the tissues of the larynx.

BIBLIOGRAPHY.

Arrowsmith, H.: Foreign Bodies in the Air and Upper Food Passages in Pre-Endoscopic Days. *Laryngoscope*, 29:633, 1919.

Battle, K. P.: A Sand Spur in the Chink of the Glottis for Four Days. *North Car. M. J.*, 24:403, 1889.

Bernstein, E. J.: Removal of Sandbur from Subglottic Space by Johnson's Direct Laryngoscope. *Detroit M. J.*, 10:429, 1910.

Burgess, J. L.: Foreign Bodies in Bronchi, Trachea and Esophagus. *Texas State J. M.*, 12:231, 1916.

Caldwell, R.: Foreign Bodies in Trachea and Esophagus. *J. Arkansas M. S.*, 15:84, 1918.

Christ, C. D.: Sand Spur in the Larynx. Report of Two Cases. *J. Florida Ass.*, 1:9, 1914.

Ferguson, E. S.: Foreign Bodies in the Air Passages. *J. Oklahoma M. Ass.*, 11:85, 1918.

Franchere, F. F.: Foreign Bodies in the Larynx. *J. A. M. A.* 50:1018, 1908.

Gayle, E. E.: Spines of *Cenchrus Tribuloides* L. *Botanical Index*, 17:126, 127, 1892.

Jackson, Chevalier: Peroral Endoscopy and Laryngeal Surgery. 236, 1915.

LaWall, C. H.: Anatomical and Chemical Studies of the Sand Spur (*Cenchrus Tribuloides* L.). *A. J. Pharmacy*, 94:581, 1922.

Sand-Bur in the Larynx: *J. A. M. A.*, 49:1458, 1907.

Small, J. K.: Flora of the Southeastern United States, 108:109, 1903.

Summers, J. E., Jr.: Sand-Bur Removed from the Larynx Aided by the Laryngoscope. *Omaha Clin.*, 1:21, 1888.

Taylor, H. M.: Endoscopic Removal of Sand Spurs from the Larynx and Tracheobronchial Tree. *J. A. M. A.*, 77:683, 1921.

Williams, F. E.: Sand-Bur in the Larynx. *Hahnemann Monthly*, 25:812, 1890.

Youngken, H. W.: Anatomical and Chemical Studies of the Sand Spur (*Cenchrus Tribuloides*). *A. J. Pharmacy*, 94:572-576, 1922.

ACUTE OSTEOMYELITIS*

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The advent of an acute pyogenic infection in one or more of an individual's bones is a pathological catastrophe which often, within a few days after onset, condemns the individual to months or even years of suffering, and frequently leaves him with a permanent disability; therefore whatever we may do during the short time at our disposal in the beginning of the disease, which promises to check its progress, even though it seems radical to us and to the patient at the time, is well worth doing.

Realizing that a long, tedious paper, including a summary of all the available knowledge upon the subject in question is inclined to be tiresome, and should be presented only to audiences of special societies, I have chosen to discuss in a brief way this very important subject, with the definite purpose in view of focusing your attention upon only two points which, in our experience with this disease, constitute the two most important principles in limiting both the time and the amount of disability resulting from this pathological catastrophe.

The first point is the absolute necessity of early diagnosis, and immediate and fearless treatment.

The second point is the advisability of conservatism in the care of these cases after the

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primary operation, and the necessity of having very clear-cut indications for whatever is done as a secondary operation.

You will see, therefore, that our attitude is quite radical in the beginning, and quite conservative in the later stages.

Purposely omitting reference to the many variations in the etiology and pathology of this disease, in order that the picture may be rendered free from the clouds which usually attend such pictures, when presented in the midst of all their modifying clauses, I am going to describe the usual sequence of events occurring in a case of this kind, in an attempt to show why a diagnosis should practically always be made during the early course of the disease.

Constituting the background of our picture we have a child between the ages of five and twenty years, whose general resistance has been impaired by some febrile disease, and who has some focal infection, frequently furuncles. A staphylococcaemia is most likely present. This constitutes a potential case of acute osteomyelitis, and should always be so regarded by the attending physician.

Suddenly a rapidly progressive picture of bone infection appears upon the background. A septic embolus lodges in the cancellous end of the diaphysis of one of the long bones, an abscess forms and rapidly increases in size during the first few hours.

During this stage the pathology gives rise to the appearance of a severe, deep-seated, throbbing pain near the site of the infection, and possibly referred to the nearest joint; tenderness to deep and continued pressure; rise of temperature and pulse rate, and an increase in total and polymorphonuclear leucocytes. The diagnosis should be made at this stage of the disease upon the above symptoms.

Twenty-four hours later the abscess has extended into the medullary canal of the bone; possibly the nutrient artery has been occluded by pressure, and the life of a considerable part of the shaft of the bone placed in jeopardy.

The temperature, pulse rate, and leucocyte count go higher and pain and tenderness increase. There is still no swelling, edema, nor redness of the soft parts overlying the involved bone. The diagnosis, based upon the clinical picture, should be a relatively easy matter at this stage of the disease.

During the next few days the pathologic picture continues to change rapidly, the pus filling

the medullary cavity of the bone; extending through the cortex to the sub-periosteal space, dissecting up the periosteum from the shaft of the bone, and depriving it of its blood supply; breaking through the periosteum into the muscle planes, and at times into the nearest joint.

It is during this stage, when sub-periosteal infection has occurred, that we begin to note the local swelling, edema, redness and increased local temperature of the soft parts. The diagnosis should be unmistakable at this stage, and yet most cases are not referred to the surgeon before this time.

I have purposely not mentioned the X-ray up to this point, because I feel that this feature of the diagnosis needs especial emphasis. Granting the truth of all the wonders of the X-ray, and admitting our increasing dependence upon it in many fields of diagnosis, I must say that I think the victims of acute osteomyelitis would be better off, as far as early treatment is concerned, had it never come into such general use. Negative X-ray findings have been the cause of fatal delay in treatment of numberless cases of acute osteomyelitis, by giving a false sense of security to both physician and patient during the early stages of the disease. In order for the X-ray to show any evidence whatever of disease in a bone, there must be a change in density of the inorganic bone salts, either bone destruction or bone production, and while osteomyelitis is a disease causing both processes, neither occur during the first four or five days of the disease, when surgery offers its best hope of constructive service.

My contention, therefore, is that the diagnosis should always be made upon clinical and laboratory evidence, and that X-ray examination is absolutely useless during the first few days of the disease.

The objects to be attained in the treatment of this disease are, first, the saving of the patient's life; second, the saving of the patient's limb, and, third, the restoration of that limb as near as possible to normalcy, in the shortest possible time. Incision and drainage of the abscess in the bone at the earliest possible moment after it begins, in the simplest, most direct, and least traumatizing manner, is, we believe, the best way to accomplish these ends.

Our method is to localize as accurately as possible, the point of greatest tenderness in the bone; make an incision at this point; incise and slightly reflect the periosteum; make two or three drill

holes into the medulla with the motor drill, and connect these up with the motor saw, cutting a gutter into the medullary canal, and inserting a rubber tissue drain. Under no circumstances do we sponge out, curette, or in any other manner attempt to remove the products of infection. We believe that this accomplishes nothing but injury to a possibly surviving and very useful endosteum.

This disease can destroy in three days what it takes the forces of nature, plus the efforts of sound, conservative and sensible surgery, months and years at times to repair by the gradual expulsion of dead bone, and its replacement by osteogenesis. No one who has labored with many cases of chronic osteomyelitis for months upon months will question the wisdom of limiting the amount of bone destruction as much as possible by providing a very early avenue of escape for the products of the infection.

If early operation for acute appendicitis is advisable, then early operation in acute osteomyelitis is imperative.

If exploratory laparotomy in cases of undetermined abdominal pathology is warranted, then exploratory tap of the medullary cavity of the long bones, in cases of early suspected osteomyelitis is advisable.

Out of ten cases, I would rather subject nine to unnecessary and harmless exploration than let one go until a positive X-ray diagnosis of osteomyelitis could be made.

Concerning the post-operative care of these cases, and the advisability of secondary operations, we have become more and more conservative. We have repeatedly seen what was considered as dead bone by X-ray study, and by actual inspection remain in position and participate in bone repair, whether by virtue of unrecognized areas of living osteogenetic bone, or in the capacity of a scaffold, such as is furnished by a dead graft, it is difficult to say.

Until a sequestrum is entirely separated from its host, and completely surrounded by granulation tissue, it is a very difficult matter to know how much of it is going to result in total loss, and therefore how much should be removed. We feel that secondary operations for removal of sequestra should only be done upon very clear-cut indications; that we should know as accurately as possible that separated sequestra exist; and that their number, size and location should be known before the operation is done. We feel also that the operation should be accomplished with

as little sacrifice of living bone as possible. We believe that removal of the entire shaft of the bone is rarely indicated, and that it is followed often by unpreventable deformity in contour of the extremity, which renders the final result little to be preferred to an amputation. Indeed, some of these cases finally come to amputation as the only relief for the deformity. We have seen such wonderful reparative changes occur with the lapse of time, in what, from X-ray appearance, seemed such badly diseased long bones, that conservatism in this stage of the disease has been forced upon us. In our opinion opening up sinuses and blindly curetting the bone is a useless and unnecessary procedure, as the small sequestra will be spontaneously discharged, and the larger ones, and those inclosed by involucrum will not be reached by this procedure.

We wish in conclusion to leave the following points impressed upon your minds:

1. The period in acute osteomyelitis during which conservation of bone is most likely to follow surgical intervention is during the first seventy-two hours.

2. The diagnosis should be made during the first forty-eight hours of the disease, upon clinical evidence alone, as the X-ray does not show changes in the bone until it is too late for surgery to save it.

3. Secondary operations should only be done with a very definite end to be accomplished; either bettering of drainage, or removal of definite sequestra which have little chance of being spontaneously extruded.

DISCUSSION.

Dr. John E. Boyd, Jacksonville:

Early diagnosis: As Dr. Simpson has told you, this is the one thing in acute osteomyelitis that robs a serious and dangerous disease of its poison fangs. I quite agree with the essayist in stating that an exploratory operation in a suspected osteomyelitis is as justifiable as a suspected obstruction of the bowel or any other acute abdominal condition.

Roentgen examination useless: I feel it is valuable as a negative finding, providing the doctor is versed in the disease.

A diagnostic point: I picked up this in the course of my reading and it does help, when added to other symptoms. Gentle pressure over the shaft at a distance from the point of greatest pain. At first such gentle pressure produces no

reaction at all, but after a moment, very suddenly, the pain becomes extremely severe, and the patient will cry out or suddenly sit up.

Early exploration of the medullary cavity in suspected cases: The primary area of infection is practically always in the medullary cavity. The amount of destruction of bone cortex depends on the extent of involvement of the endosteum and periosteum. Again the subsequent bone repair is dependent on the endosteum, periosteum or both. What I desire to stress is, of course, not new to the experienced surgeon, but to the inexperienced one it may lead to serious results for the patient. Having made the skin incision, in the very early cases you will find the following: The periosteum overlying the involved region is hyperæmic, pinkish in color, and heavy with œdema. On separating the periosteum from the bone-bleeding is more evident than it is in the normal condition. On opening the marrow cavity with a bone drill or trephine, as is the usual custom, the normal fat tissue which ordinarily will not flow has a melted appearance and oil may even be seen oozing from the marrow spaces. At this incipient stage one may find no pus whatever and it is during this time that operation accomplishes the most good, since if the medulla is well drained at this time the infection may be checked absolutely so that medullary and cortical necrosis do not occur at all. Dr. A. J. Ochsner of Chicago has laid great stress on this point.

Repeated operations: I desire to coincide with Dr. Simpson in his advice against this practice. In my humble opinion it is little short of criminal. If your primary operation has been performed with a knowledge of the disease and the exercise of experience subsequent operations rarely become imperative. A patient conservatism may try your guts and lose you the confidence of the patient and his friends, but far better this than a sacrifice of surgical end result and at times a sacrifice of the patient's limb.

Subperiosteal resection: I have no personal experience in this operative procedure, therefore I am going to take the liberty of quoting from the article of Dr. Howard L. Beye of Iowa City, Iowa, which appears in the December, 1923, *Surgery Gynaecology and Obstetrics*. After reviewing the subject his conclusions are:

(1) It is impossible to determine accurately, at the time when it is advised that the operation be performed, just what portion of the involved bone is necrotic.

(2) The second fundamental error in the operation of subperiosteal resection is to assume that regeneration will take place adequately from the remaining periosteum following resection. In stripping the periosteum from the cortex the most actively osteogenic portion of the whole bone may be left on the shaft and removed with it.

(3) The third fundamental error in this operation is that the procedure is very likely to be followed by deformity. In cases in which regeneration of bone is complete and rapid, and the resected bone is splintered by a neighboring bone, the deformity may be practically nihil. In cases in which a long period of time elapses until a new shaft has developed, very definite shortening of the reformed bone may take place.

Dr. L. W. Cunningham, Jacksonville:

In discussing acute osteomyelitis the most important point we would make is when you are dealing with an acute virulent bone infection you must not depend on the X-ray film to make your diagnosis but let the clinical picture be your guide and establish proper surgical drainage. It will be four to seven days before the process of decalcification has advanced to the point where definite evidence is present on the X-ray film. A negative X-ray report must not lead the surgeon to consider some other lesion, but he must be impressed with the fact that the infection and decalcification of the bone do not progress with equal rapidity and operate if in doubt. Serial film study is of great value when it can be had. Study of the bone picture from day to day will allow one to secure the earliest X-ray evidence. When definite X-ray evidence is present in the form of loss of bone density in the worm-eaten type or localized area the infection is in a sense no longer acute. Nature at this point is as a rule building up a barrier of new bone to the infection. Cases operated at this stage of the disease will have a much longer course and likelihood of greater disability. Where they are opened early and only pus found the recovery is much quicker with less bone destruction and formation of sequestra.

We are speaking of the acute pyogenic infection of bone which may begin in the medullary canal, as a periostitis or as an osteitis, meaning involvement of the cortex of the bone and extend to the canal. We might also mention the type seen in compound infected fractures and again that type that results from the direct extension from an abscess in adjacent soft tissue. We quite

recently saw one of the latter type which presented an absolutely normal bone picture on the film but approximately a week later showed an osteomyelitis. Surgical interference in this case had been delayed by ignorant parents.

If an acute bone infection is allowed to continue without surgical drainage it will extend the full length of the shaft and frequently pierce the cortex of the bone and invade the soft tissues. Sequestra will be formed and a long, tedious surgical condition results. While it is aside from the title of the paper we would like to stress the point of conservatism in the removal of so-called dead or softened bone. Sequestra when definitely present need to be removed and we would note that it is far from easy to always recognize one when present. They are frequently surrounded by dense bone that nature is building in the process of repair or overlapped by several areas of different type. Much bone that is and was removed is not dead and if allowed to remain will be used by nature as a ladder to build new bone upon. We would again stress the point that in acute osteomyelitis of pyogenic type there is no typical appearance of the X-ray film till four to seven days have elapsed. That the clinical picture must be the guide of the surgeon. That if one must delay, serial film study from day to day should by all means be done if at all possible.

Dr. R. M. Harkness, Lake City:

I want to emphasize one point that Dr. Simpson made in his paper, by confessing a mistake of my own. We don't like to confess our mistakes, but it is good for us and possibly good for others, too.

About three years ago I made a diagnosis of acute osteomyelitis in a child, an infection in the femur, and allowed my judgment to be warped by a negative X-ray. I knew we had an acute infection, so we opened down to the femur and found a little pus under the periosteum, and perhaps if I had had Dr. Boyd's experience I would have had sense enough to open up this bone, which I did not. This case was relieved of the acute symptoms at the time and went out of the hospital apparently convalescent. This patient has gone from doctor to doctor, including a chiropractor, for the past three years.

Just a few days ago this patient came back to me and I removed a sequestrum involving practically the whole shaft of the femur, which would not have been necessary had I drained the medulla when this case was at the incipiency of the disease.

Dr. J. S. McEwan, Orlando:

Probably you have had more meat out of this paper than any other paper that has been read before this meeting. There were just the right things said and no more.

The question of diagnosis, of course, is the principal thing, that is pain, tenderness, temperature and a high leukocyte count. The early diagnosis is the important thing in acute osteomyelitis—and the early operation.

I cannot add anything to what the Doctor has said, because he has said it all. The principal thing is to operate in your first twenty-four or forty-eight hours if you can, and not after a week or so. As the Doctor said, open up the bone, but do not curette the medulla. If you wait a few hours, you have a septicemia, as a rule.

You men who have handled many of these cases know you have a sick patient, and that many of them die. The Doctor has discussed the two important things, early diagnosis and early treatment.

Dr. J. Knox Simpson, Jacksonville (closing):

I just want to thank the gentlemen who have so kindly discussed the paper, and to say that I am deeply pleased to have my very good friend, Dr. Cunningham, back me up in what I had to say about the early X-ray findings, or rather the absence of early X-ray findings.

I do not want to leave the impression that I do not recommend the X-ray. I do. I utilize the X-ray at every possible point, in everything that I do, but as Dr. Boyd says, everybody does not know how to interpret X-ray films, and a simple statement from the Roentgenologist that the X-ray examination was negative may mean to some men that there is no disease in the bone. That is not the case. They do not intend that as their conclusion—they simply say that the X-ray examination is negative. That may, or may not, mean that there is no infection in the bone.

NOTES ON LUNG PATHOLOGIES OTHER THAN TUBERCULOSIS*

G. RAAP, M. D.,

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Osler's dictum advises us to know tuberculosis and syphilis as a basis for the entire study of medicine. And in either a clinical or Roentgen study of chest pathology, an intimate knowledge of tuberculosis is essential to competent diagnosis. The Roentgen findings in a well-marked case of nephrolithiasis are so characteristic that it is a simple matter to recognize its shadows after one has seen the X-ray film of one such case. Pathologies of the chest, however, offer so many vagaries, their Roentgen manifestations resemble each other so closely, progress and repair, and pathology in other parts of the body play so great a role, that even the most competent in the field of Roentgen diagnosis are frequently at sea to differentiate in certain cases.

We cannot emphasize sufficiently the importance of a thorough knowledge of thoracic pathology, not only pulmonary, but also pleural, cardiac, mediastinal, and experience has shown us that we must include in this list focal infection, bone pathology, and systemic pathology as well. To many a so-called Roentgenologist, one post-mortem examination, with special reference to the thorax, would be an eye-opener. I have in mind one professor of Roentgenology in a Class A medical school who offers a course of Roentgenology to post-graduates, who admitted to me that he had never seen a sectional lung. I would as soon entrust an interpretation of chest pathology to one of Dr. Abram's followers.

Practically all incipient pulmonary pathology, at some time or other, gives the symptom complex of a focal infection. If we keep this in mind whenever a patient presents himself with the complaint of fatigue, malaise, loss of weight, rapid pulse, slight fever, occasional spitting of blood, and we find a few rales, localized or general, and we assure ourselves that all else has been ruled out before we make a diagnosis of tuberculosis, we will increase our average of correct diagnoses. We may be correct in the great majority of cases, but the minority cases are the trouble-makers—those that do harm to our reputations.

A brief review of the essentials of the anatomy and the pathology of the disease is essential to

an understanding of the various changes which may occur in the appearance of the lungs, and it is necessary to apply these points in the reading of every chest film. Allow me to quote in part from the work of Miller and Skavlem, with occasional digressions of my own:

"Anatomically, in the upper lobes, we have the vertebral, first and second interspace trunks, with their anterior and posterior divisions. On the left side we have in addition the long branch which runs down into the lingual tip of the upper left lobe. Below the main stem bronchus to the upper lobe, we see the trunks to the middle lobe on the right side, running anteriorly. The branches to the lower lobe all arise from a main stem bronchus, and except for anterior and posterior divisions have no special classification. These landmarks are essential to a localization of a lesion in the parenchyma of the lung."

Recent work from the Mayo Laboratories would tend to indicate that the shadows we see in the normal lung, and which we always thought were cast by the walls of the bronchi, are shadows cast by the walls of the arteries which accompany the bronchi. At any rate, we know that the density of these landmarks is determined most by the changes which take place in the connective tissue containing the bronchi, blood vessels, lymph vessels and glands.

Lymph Flow.

"The normal lymph flow through the lung, which occurs from the lung toward the hilum, except for a small area which is immediately under the pleura and which may drain into the pleural lymphatics, has a vital bearing on the pathology and progress of disease."

Septa.

But of prime importance to the reading of an X-ray chest palet is a thorough understanding of the septa of the lung and their influence on the pathology. Septa are prolongations of the connective tissues from the pleura down into the lung. These connective tissue septa, rich in lymphatics, act as excellent barriers to the spread by continuity of any lung pathology characterized by exudation. Inflammatory exudation starting within any of these small compartments between two septa, anatomically known as the "secondary lobules of Miller," is definitely limited by these barriers. Spread through these barriers will not take place until cavitation occurs. The localization and restriction of the pathological changes by these septa, accounts for our localized rales

*Read before the Dade County Medical Society, at Miami, August 1, 1924.

and also explains so-called "fans." The fans may be present in any lung lesion characterized by exudate. The cellular elements of an acute pneumonia, apical catarrh, pneumoconiosis, infarct, are all held in check by these septa and can consequently furnish localized rales, and fans on an X-ray film. But the differentiation of these lesions can be made by a further study with an understanding of the progress of the pathology in question.

Reaction to Tuberculosis.

Upon the implantation of the tubercle bacillus in a sensitized individual, or the implantation of the pyogenic organisms in non-resistant individuals, an exudate is the first reaction. Just as is the case on the injection of any foreign protein, this exudate is at first of the polymorphonuclear type. But in tuberculosis especially, this lasts only about forty-eight hours, and is then replaced by mononuclear exudates and endothelial cells. This gives us our characteristic microscopic picture of tuberculosis. It may be either minute or massive, but must be massive to show us Roentgen findings, and personally I rather doubt the Roentgen report which states that "tubercles are seen along certain markings," no matter how carefully the films were made, for in the last analysis, the X-ray is not a microscope.

Given a tuberculous infection in a sensitized individual, the pathology advances through the stages of serious exudate, cellular exudate, fibrosis, caseation, calcification, or it may not tend toward healing and go through the stages of cavitation and bronchopneumonia by aspiration. In most well advanced cases and in many of the fairly early cases, we see lesions of at least two of these stages, characterized in the film by their differing densities. In incipient or apparently advanced cases, this is the chief differential point in the diagnosis of tuberculosis.

Other Exudates.

As we stated before, any exudate thrown out into the lung tissue will be limited by the septa. Therefore any lung inflammation with exudate can produce a fan-shaped density. An infarct with its outpouring of blood elements will produce such a density, but its location is usually atypical and its density readily shows us that it is in all probability not a lesion due to a tuberculous infection. If there are several infarcts, they will in all probability be of the same pathologic state, and will all be of about the same density.

Traumatic Densities.

Case No. 664.—This patient showed clinical findings in the right axilla which prompted the clinician to ask for an X-ray examination. Upon study of these films, the question arose as to the cause of this cone-like shadow which appears to lie between the upper and middle right lobes. Upon questioning the patient again, it was found that some weeks previously he had fallen from a telephone pole. This is in all probability the shadow of a hemorrhage outside the pleura at this point. It obscures the ribs so that we are unable to state whether or not there has been a fracture of the rib in this area. The question was asked, "Can this be an infarct?" but the stereoscopic films show that this shadow has somewhat distorted the arrangement of the peripheral trunk markings, and it was therefore our impression that we might rule out infarction. Infarction also usually is secondary to thromboses in other parts of the body or occurs with chronic cardiac lesions or septic infections.

The Pneumonias and Influenza.

The pneumonias, when typical, are easily differentiated from other pathologies, but the intermediate stages, the incipient, and the resolving stages may lead to confusion, and certain atypical types of pneumonia may be confusing. In many of these cases, it is essential that the Roentgenologist be acquainted with the history of the case. After the uniform, sharply defined, lobar density of a frank pneumonia has disappeared, thickened bronchial markings and enlarged glands may remain for a long period, and may simulate any one of a number of chronic lesions. In bronchopneumonia, the differentiation must be made from abscess, bronchiectasis, malignancy, caseous bronchopneumonia from tuberculosis, largely upon the course and clinical history. Unresolved pneumonia must be distinguished from interlobar empyema, tuberculous pneumonia and bronchial stenosis by clinical and laboratory findings.

The recent influenza epidemic brought many of these atypical pneumonias to our attention. The most confusing type was what Sante calls "hilus pneumonia" and what Ewing called "critical pneumonia" because of its rapid fatality. These resemble the picture of tuberculosis in children, although they occur more often in adults, they may be present over so long a period as to suggest a tuberculous etiology, and they may show tubercle bacilli in the sputum, and they

may show cavity formation in the hilus region. These are in all probability not tuberculous in etiology, but they certainly give us a confusing clinical and Roentgen picture. In a series of twelve cases which Sante studied, no definite consolidation was noted, yet the process is very evidently an inflammatory one, and when it involves the hilus glands in the presence of tuberculosis, it may recur, possibly by repeated breaking down of tuberculous glands in the hilum region. In the cases which recover, however, restoration is always ultimately complete.

Bronchitis.

Acute bronchitis gives no characteristic picture, but the chronic bronchitis in certain stages present the appearance of a healing tuberculous lesion with its increased density of the bronchial markings and glands. Here again, the differentiation lies not in a study of the bronchial markings, but in a study of the parenchymatous tissues. If a patient has a bronchitis which is differentiated from tuberculosis with so much difficulty, I feel that I would rather tell the patient that they have a bronchitis than to frighten them with a diagnosis of tuberculosis.

Lung Abscess.

We have seen one case of lung abscess which was being treated as a tuberculosis, and had been considered a far advanced case for six months. Surgical procedure brought this patient back to his duties as a policeman in six weeks. The localization of some of these abscesses is an easy matter, but in other cases, even the most accurate methods fail. Dr. Sante of St. Louis demonstrated at the Chicago meeting how the Hirtz compass could be used to localize these abscesses very accurately. This method requires considerable practice, however, and it would be inadvisable for the average Roentgenologist to attempt it in the sporadic case which occurs in the average practice. Abscesses may also be confused with bronchopneumonia, bronchiectasis, and rarely a metastatic tumor.

Bronchostenosis.

Bronchostenosis due to foreign bodies, aneurism, tumors and lues give a uniform increased density in the area supplied by the affected bronchus, and the movements of the diaphragm are restricted on the affected side. The history of these cases is essential to guard the Roentgen interpretation against error, but if a localized pneumonia sets in, or by chance the foreign body

allows air to pass in but not out of the lung, the picture becomes a confusing one.

Anaphylaxis.

The law of probability has often been your salvation, as clinicians, and when certain cases occur as frequently as they do in some of our recent epidemics, your diagnosis is influenced greatly by the epidemic disease. So also in our field. But to show how sensitive the Roentgen appearance of the chest is to minor details and how guarded must be our diagnosis, Liss of Cornell rayed thirty-three chests before and after the inoculation of triple typhoid vaccine and found that all of these cases showed pulmonary or hilum changes, involving the apices, the peribronchial markings and the parenchymatous tissues. We have noted asthmatics in whom the elimination of a diagnosis of incipient tuberculosis was a difficult matter, and due to the fact that we were unable to study these chests at repeated intervals, have never been able to observe the changes due to anaphylaxis. There is no doubt that they do occur. This is a problem well worth intensive study.

Sinus Infection.

The work of Mullen and Webb in Colorado Springs first called attention to the possibility of a relation between sinus infections and the group of cases which we commonly call bronchiectasis, purulent bronchitis, apical catarrh, and asthma when we are unable to find tuberculosis in the X-ray film, but do see certain mild changes which do not allow us to give the patient a negative diagnosis. Dr. Dunham found that in reviewing 389 cases, most of them referred by able clinicians as tuberculous, that 28 per cent of these were suffering from other foci of infection. In the vast majority, this focus of infection was found in the head. We read the statement recently, "every case of bronchitis is accompanied by sinus disease." This may be too dogmatic, but certainly many of these cases do have their focus of infection in the sinuses, and what is more important is that a diseased sinus can be present with no symptoms of which the patient is aware referable to the head.

We should also keep in mind that given a limited, inactive tuberculous lesion found on physical examination, we must not be misled to explain all the symptoms by this condition. Frequently an acute lesion at some other point is producing these symptoms. Nose and throat pathology are particularly common in those

whose resistance has been weakened by tuberculosis.

The pulmonary lesions secondary to chronic sinus infection may be characterized by localized areas of exudate in the lung. They give you the typical clinical picture of incipient tuberculosis. The X-ray may give us definite localized densities, but with two or more densities present they can be seen to be of the same quality. These pathologic changes do not follow the same course seen in tuberculosis, and so the X-ray shadows are different.

Pneumoconiosis.

In 1917, Dunham's first publications emphasized the fan as the characteristic lesion of tuberculosis, and his work was soon lauded as the key to the diagnosis of pulmonary tuberculosis. Jarvis, an oto-laryngologist in Barre, Vermont, began to X-ray chests of his patients, and found that most of the workers in the granite quarries of that vicinity showed fan-like densities which confused his interpretations. At his own expense he studied some three hundred cases, and found that stone-cutters' disease was a definite clinical entity. It was his observation that these densities which were present to a greater or lesser extent in all the chests of stone-cutters, resembled tuberculosis, post-influenza conditions, lobar pneumonia, bronchopneumonia, carcinoma, sarcoma, lung abscess, pleurisy and so forth. All these are men who consider themselves well, and appear to be in perfect health, and are working every day. It was my privilege to study some two hundred of these films, and I must confess that, with what little I knew of pulmonary pathology at the time, it would have been impossible to differentiate these films from the actual conditions which were simulated. Only the occupational history gave the clue to the differentiation. This monumental work not only gave us a new concept of the many-sidedness of our problem, but also caused us to ask whether the early study of these cases would not direct us as to what type of lesions we might expect these densities to chart the highway for, when the patient's resistance fell too low, and emphasized the importance of the economic problem, for we may by this means be able to state which occupations produce a suitable preparation of the soil for the development of tuberculous and other processes. But primarily, it revealed the fact that the fan, in itself, was not the absolute characteristic of a tuberculous process.

Pulmonary Syphilis.

The question was recently asked me, "How do you make a diagnosis of pulmonary syphilis?" My answer was, "You don't make a diagnosis." We have seen numerous stereoscopic chest films, in which we felt that tuberculosis was not the etiologic factor for the densities seen. We observed four cases of pulmonary pathology, atypical for any of the well known infections, with a concomitant positive Wassermann. All of these were tentatively considered pathology of unknown etiology, possibly lues. One was observed after six months, no treatment, and the densities had disappeared; another was given intensive anti-luetic treatment, and after one year the density still remained; another cleared up under treatment, and later committed suicide, was autopsied, and no changes were observed in the tissues of the region in question; the fourth was not treated, and we lost track of him. Very gratifying results, indeed.

Two cases have come to us during the past year. In one of these we stated, "This is either far advanced tuberculosis or lues of the lung. If the former, he will not survive two months; if the latter, intensive anti-luetic treatment will produce changes which will assist in clearing up the diagnosis." This patient is comparatively well after one year, recently showed a positive Wassermann. We will never have opportunity to study this case at post-mortem, unless we break down his mausoleum.

The other case was diagnosed "tuberculosis complicated by other pathology, which may be lues." This man steadfastly denied luetic infection, but when a positive Wassermann was obtained, he admitted his infection. He also had a positive tuberculous sputum.

The spirochete has never been demonstrated in these pulmonary lesions, and until it is, we shall continue to lose sleep before we render a diagnosis of pulmonary lues.

Cardiac Changes.

Since it is very rare to find a patient with mitral stenosis contracting tuberculosis, it is still more strange that the X-ray differentiation between these diseases should be a difficult one. Cardiac pneumofibrosis of any type develops as part of a pathologic process which passes through the stages of active and passive congestion, edema, infarction, either minute or massive and fibrotic changes. As a result the extent of change varies widely from the X-ray viewpoint,

depending upon the severity and duration of the disease. As a rule, because it is a vascular process, the early changes are seen at the hilum and as the disease progresses they extend outward along the bronchial tree into the lung fields. They may even involve the entire lung area in advanced cases. Usually the films have a washed-cut appearance, the density and size of the hilus shadow are increased, its borders are hazy and indefinite. But in old cases the outlines are distinct by virtue of the extensive fibrosis which has already taken place. These cases are frequently read as peribronchial or lymphatic tuberculosis. A careful study of the cardiac shadow is essential in these cases, and the radiologist should be acquainted with the clinical history and the physical findings.

Malignancy.

Malignant tumors, such as carcinoma or sarcoma of the lung, usually spread by continuity with nor regard for the septa, consequently they result in ball-like lesions in most cases. However, there is a type of carcinomatosis which follows the bronchial markings and then it must be ruled out by a thorough search for a primary malignancy.

I have not mentioned pulmonary gangrene, actinomycosis, echinococcus, spirochetal gangrene, and a few of the other rarer diseases because we can not describe typical findings for them.

Allow me to emphasize this fact again, that as long as the clinician does not give the Roentgenologist all the information he can possibly muster from his examination, we are greatly handicapped, and that only by constant post-mortem examination and pathologic work are we able to progress in our work. Personally, I shall consider it a favor to be allowed to study autopsies with any of you whether the chests in these cases be normal or otherwise.

TONSILECTOMY UNDER LOCAL ANAESTHESIA.

J. G. PATTERSON, M. D.,
Bartow, Fla.

I have found that operations, in all patients whose confidence can be reasonably well established, have proven very much more efficient and satisfactory, usually from ten years of age up, except in very nervous patients.

The course of procedure in tonsilectomy under local anaesthesia: Light supper the night before

the operation, nothing taken into the stomach the morning of operation, 15 to 25 minutes before the operation, patient is given a hypodermic of 1/8 grain morphine and 1/250 grain scopolamin; five or ten minutes later, patient is placed in an ordinary treatment chair in a sitting or in a semi-recumbent posture.

The post-pharynx, tonsils, tonsil pillows and especially the posterior 1/3 of tongue are swabbed with a 10 per cent solution of cocaine until desensitized, care being taken to prevent patient from swallowing the cocaine solution. Each swab should be squeezed to remove excess of solution before applying. After five to seven minutes you should have complete relaxation of reflexes, which lessens pain and excitement from the later piercing by the needle.

The nervous gagging so often noticed may be quite well controlled by having patient breathe deeply through the open mouth.

The solution I use is a freshly prepared solution of novocaine, 1/2 of 1 per cent to 1 per cent, to which is added one drop of adrenalin chloride to the drachm. Any good tonsil syringe with curved tonsilar needle is sufficient. A needle is introduced behind the anterior pillows midway between the superior and the inferior poles, and a few drops injected. The needle is carried upward and downward without re-introducing, traction being made upon the needle to allow the solution to pass around the tonsil. The superior and inferior poles are treated in the same manner with special attention to the inferior, as it is usually more sensitive.

The posterior pillow is pierced in two or three places with just two or three drops at each point. The tonsil itself is injected with a few drops deep into the tissues, thus completing the anaesthesia of the first one, and the same procedure is immediately carried out for the second one, requiring two or three minutes to complete the injection and only about two or three drachms of the solution required for both tonsils.

Do not be too hasty in beginning operation, as most all pain is experienced at the beginning of the operation, showing that the solution has not had sufficient time to produce the complete anaesthesia.

Operation: Introduce a Lewis screw or lift the tonsil with tonsil forceps. Begin with Hurd's blunt dissector, or other instruments of your choice, and dissect from the tonsil the posterior pillow, beginning at the superior portion and dissecting downward, then carefully dissecting the

anterior pillow in the same manner, carrying it well to the base, then pass a wire loop, from a Beck or Beck-Shenk or Tyding's improved snare over the tonsil from above downward and slowly remove by pressure from the loop.

After removal, use retractor and see that no particles are left intact, also see that field of operation is free from bleeding points. If any points show bleeding, grasp with haemostat and firm pressure is made, which usually controls the hemorrhage. If necessary, tie off the vessel; I have never had to tie one. I have used ice to the throat immediately after operation in persistent oozing. Usually ten minutes will control same very satisfactorily.

Do not stay in the wound too long. Do the work thoroughly and get out, thereby avoiding unnecessary traumatism to the parts.

I use as a routine a solution of glycerite of tanrin in the field of operation following the arresting of all visible hemorrhage, and in few

cases, where oozing seemed persistent, I have resorted to the use of Monsel's solution. The objection to Monsel's solution, however, is the filthy discoloration and the coagulation of the blood.

I advise complete rest for 24 to 48 hours, ice bag for pain as long as the patient desires, which greatly lessens the danger of post-operative hemorrhage, and will practically control the pain.

I use as a routine a hypodermic of 1/8 morphine and 1/150 atropine every six or eight hours for three or four doses. That prevents the excessive flow of saliva and controls pain.

After the patients are up, I allow them to chew and swallow five grains of aspirin every three or four hours, if they require it for pain. It seems to act somewhat as a local anaesthetic, and is also slightly antiseptic.

I never us gargles, sprays or mouth washes, but have patient return to the office from time to time for inspection.

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THE SOUTHERN MEDICAL ASSOCIA- TION.

Florida has maintained a high percentage of membership in the Southern Medical Association, and it should be higher. Every member of the State Association should become a member of the Southern Medical. No organization yields a greater influence in medical matters in the South and its scientific attainments are nowhere exceeded. Its membership is composed of men of wide and varied experience in scientific research.

The co-operation and co-ordination of its membership is manifest and the cordiality and friendship expressed and displayed at its annual meetings is wholehearted, warm and sincere. The scientific program is replete with succinct and scintillating observations on the subjects presented in the papers read and the discussions are full and free, making the sessions a veritably intensive post-graduate study.

The Southern Medical Association issues a Journal which is mailed to each member monthly. The membership fee in the Association is \$3.00 per year and every number of the Journal is worth that much to any one who will read it. The managers and editors are energetic, faithful and capable; men of earnestness and resourcefulness, and they would appreciate any scientific article sent them for publication and would consider it a favor to receive reports of interesting cases and contributions of constructive criticism relative to the quality of the Journal.

The Councilors in the various districts of the Florida Medical Association are working diligently to increase the membership, but the districts cover a large territory and one worker, however faithful, cannot do it all, and it behooves and ought to appeal to every member to do his "bit" in his immediate community, in offering every eligible member of the profession in the State an opportunity to become associated with his State medical organization and in no less degree, associate himself with the great Southern Medical Association. Everyone was urged to do his bit in order that the World War might be won, and it was done. Do your "bit" to increase the membership in the State Association so that when the next annual meeting is held at St. Petersburg in 1925 the enrollment will be 1,000 or more.

Prepare now to attend the meeting of the Southern Medical at New Orleans in November.

New Orleans offers much to the visitor. Its history is replete with romance and accomplishments. It is a beautiful city and characteristic. It is known the world over for its hospitality and as an outstanding medical center.

Please take notice of the "Application for Membership" blank for the Southern Medical Association which appears below. It is our sincere hope that every reader of this, who is not a member of the Southern Medical Association, will fill out the enclosed blank and mail it with a \$3.00 check to the Southern Medical Association headquarters in Birmingham.

SOUTHERN MEDICAL ASSOCIATION

Application for Membership

, 192

I desire to be enrolled as a member of the Southern Medical Association (which includes subscription to the Southern Medical Journal), for which I enclose \$3.00 to pay the first year's dues. I am a member in good stand-

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..... State Medical Societies.

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Local Address..... City.....

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MEMBERSHIP—The membership of this Association shall be limited to members of the various State and Local Medical Societies of the following States, viz: Alabama, Arkansas, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, Missouri, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia, and Medical Officers of the United States Army, Navy and Public Health Service.—Art. III, Sec. 1, Constitution.

DUES—The dues of this Association (which includes a year's subscription to the Southern Medical Journal) shall be \$3.00 per year, payable annually.—Extract, Chapter VIII, By-Laws.

Fill out and mail with check to Southern Medical Association,
Empire Bldg., Birmingham, Ala.

THE DEVELOPMENT OF ORGANIZED MEDICINE IN FLORIDA

During our last annual meeting in Orlando, considerable enthusiasm was developed relative to increasing the membership of our Association. Our President presented to us in his address some most interesting facts showing the lethargy in the upbuilding of our organization. To quote from this address published in the June, 1924, issue of THE JOURNAL:

"Chart showing (1) number of physicians in these States as per 1923 A. M. A. Directory; (2) number who are members of the State Medical Associations; (3) per cent who are members of State Associations.

STATE.	No. Doctors 1923	In State Med. Assn. 1923	Per Cent Mem. State Assn.
	A. M. A. Dir.	A. M. A. Dir.	(3)
	(1)	(2)	
Virginia	2,503	1,959	78%
West Virginia.....	1,751	1,447	83%
Alabama	2,213	1,665	72%
North Carolina	2,226	1,551	70%
Missouri	5,827	3,555	61%
Oklahoma	2,600	1,567	61%
Kentucky	3,155	1,858	59%
Texas	6,094	3,516	58%
Georgia	3,274	1,860	57%
Louisiana	2,058	1,121	55%
Maryland	2,349	1,264	54%
South Carolina.....	1,368	729	53%
Arkansas	2,303	1,194	52%
Mississippi	1,792	848	48%
Tennessee	3,228	1,440	45%
Florida	1,348	586	44%
	44,189	26,160	Av. 59%

I must admit on perusal of same that I was shocked to find that there was no State south of the Mason and Dixon Line which had so small a percentage of the physicians residing within its borders in their State Association as has Florida. When we have heard from all sides the reports from the statisticians of the tremendous development of Florida in the past few years and then see this small increase in our membership, it is full time for us to ask ourselves why this is true. First, let us inquire as to what has become of the 335 men who were licensed by our examining boards from 1918 to 1923 to practice medicine in Florida. Surely, an overwhelming percentage of these men are ethical and eligible and are splendid timber for our organization.

The Florida Medical Association Statistics, as printed in the Directory of the American Medical Association for the years 1918 and 1923:

	Population of Florida	Membership of Fla. Medical Assn.
1918	870,802	568
1923	968,470	586

Can it be that with the phenomenal development of our great State we are going to set idly by and not develop organized medicine? We of the medical profession revel in the thought of what organized medicine has accomplished in the State and feel its growth and development was made possible by medical science administered by organized medicine.

In some sections activity in developing and increasing membership in the county societies has been noted. Sarasota County has recently organized because some one individual was interested enough in organized medicine to spend a few hours in interesting others.

Quoting again from the President's address in Orlando:

"Technically speaking, there has been no provision in our Association for a Councillor for the following counties: Okaloosa, Dixie, Seminole, Union, Flagler, Bay, Highlands, Glades, Hardee, Charlotte, Hendry, Collier, Broward, Okeechobee and Sarasota. In this matter our Association has been in a deep sleep that rivals that of Rip Van Winkle and it is now time for us to open our eyes and see where we are. West Virginia 83 per cent, Virginia 78 per cent, Alabama 72 per cent, and Florida, last and least, 44 per cent—the smallest percentage of any Southern State.

In our Association, the precedent has been handed down that a Councillor was more or less an inactive officer and that little was expected of him, and yet, in a recent bulletin of the American Medical Association, the statement was made that the Councillor was the most important officer of the State Association.

With the reapportionment of Districts, and the appointing of new Councillors, it is hoped that they will evidence a keen interest in organizing societies and stimulating all eligible men in their districts to become members.

Our association must increase its membership proportionately with the growth of the State, in order that organized medicine may protect the public. Legislation which concerns public health matters is constantly being brought before our legislative bodies and our fair-thinking legislators are looking to organized medicine for advice. If we permit a lagging in our growth, we cannot expect to exert the good and necessary influence that organized medicine is exerting in our adjoining States. In 1923 organized medicine constituted the minority of practitioners in this State.

Charlatans and poorly qualified practitioners from without our borders through numerous avenues, have attempted in the past to have legislation passed that will permit them to practice without appearing before our State Board of Medical Examiners. Quoting an editorial appearing in the August, 1923, issue of THE JOURNAL:

"Florida cannot now and never will be able to countenance license by reciprocity. The leaders of our profession throughout the State are a unit on the question. THE JOURNAL believes, however, that we should clearly show our sister

States that our stand is taken in the interests of the general public rather than from selfish motives. The whole trend of medical legislation throughout the entire country for the past decade and longer has been to demand of those who wish to follow the practice of medicine as a life career, educational qualifications that would justify the granting of license by the State body. In only this manner can the State protect the public from the charlatan, the quack and men of mediocre or no ability."

This bill will undoubtedly be brought up before our next Legislature along with numerous other measures which concern the public health of every community. Will organized medicine be ready to serve our public as matters of this nature arise?

Annually a large number of physicians are obtaining license in the State. From our membership statistics these men are certainly not becoming members of the County and State Societies in the proportion that they should. Undoubtedly the majority of these men are desirable and eligible, but do not evince interest in organized medicine, because of our failing to bring them into our fold. We must consider carefully all applicants and prevent those who would exert malign influence on our activities from obtaining membership, but there must be hundreds of practitioners in the State who are eligible and who are not within our ranks.

Let this editorial serve as an impetus to the *thousand member campaign* begun at our last meeting. Let each man feel his individual responsibility to organized medicine and the public health of this sun-blest land of ours.

THE SARASOTA MEDICAL SOCIETY

THE JOURNAL is glad to announce that since our last issue the Sarasota County Medical Society has been organized.

The charter members of the Sarasota County Medical Society have long been an inspiration to the medical men of Florida, and the State Association now extends through THE JOURNAL their heartiest congratulations and wish them godspeed.

This new organization in its first week announces the fact that every member holds membership in the Southern Medical Association. Some of our older societies in the State would do well to follow such an example, for this is

but another evidence of progress and good judgment.

The development of Sarasota in finance and commerce has astounded Florida, and we can all rest assured that in things medical the Sarasota County Medical Society will now do likewise. It is to be hoped that other counties in the State who have not organized will take notice of this and resolve to follow this example immediately.

The present officers are as follows:

Dr. Joseph Halton, President.

Dr. Jack Halton, Vice-President.

Dr. O. H. Cribbin, Secretary and Treasurer.

Sarasota County Medical Society—good luck and God bless you.

PINELLAS COUNTY MEDICAL SOCIETY

At a recent meeting of the Pinellas County Medical Society the following officers were elected for the ensuing year:

President, Carl A. Williams.

First Vice-President, LeRoy A. Wylie.

Second Vice-President, H. L. Putnam.

Treasurer, A. J. Smith.

Secretary, O. O. Feaster.

Censor, '27, A. J. Wood, *vice* A. J. Wood.

REVIEWS FROM CURRENT LITERATURE

BRONCHIAL ASTHMA.

Bronchial Asthma Treated with X-Rays. The British Journal of Radiology, Vol. XXIX, No. 289, August, 1924, p. 307.

Schilling and Grodel, in "Die Roentgen Behandlung Innerer Krankheiten," independently found somewhat accidentally that a patient treated for another condition who had suffered severely with asthma was relieved of the asthma. Grodel, during 1920 and 1921, treated the spleen of 71 patients suffering with asthma and seventy-five per cent of the patients were markedly improved and relieved.

INFECTIONS OF THE HAND

Garlock, John H.: Infections of the Hand. Surg. Gyn. & Obs., Vol. XXXIX, p. 165.

The following paper embodies an analysis and a report of the end-results of 460 consecutive infections of the hand seen in the private, clinic, and hospital practice of the writer:

1. The vast majority of simple abscesses of the hand are, as a rule, easily recognized and may be treated adequately. The occasional case of abscess over the site of a clearly defined anatomical synovial compartment or fascial space often offers considerable difficulty in differential diagnosis. Recognition of the importance of minor signs would seem to tend to overcome this difficulty.

2. Localized cellulitis of the digits and hand often simulates closely the more severe infections of the tendon sheaths or fascial spaces. As conservative treatment practically always results in a cure and as unnecessary incisions usually aggravate the conditions present, it becomes imperative to study most carefully the various

symptoms and objective findings in each individual case so that a positive diagnosis may be arrived at.

3. Isolated abscess of the web spaces is not an infrequent form of hand infection. The physical signs are distinctive and, to secure adequate drainage, the web may be split from the front to back, for no untoward sequelæ followed this procedure.

4. The successful treatment of collar-button abscess depends mainly upon the recognition and isolation of the tiny sinus connecting the superficial and deep pockets. The latter is very often the more extensive of the two. The results in this group are most satisfactory, two out of the 42 in this series presenting slight permanent anatomical defects.

5. Paronychia is probably more often unilateral than total. It is better apparently to treat these early infections radically than to await the more evident typical "run-around." It is more important to remember that, in the majority of instances (28 out of 42 cases here) the subungual region adjacent to the infected paronychium is also involved, requiring removal of the side and corner of the nail to secure proper drainage. The chronic cases, with fungus-like granulations extending from beneath the eponychium, yield to the radical operation or a Bier's hyperæmia for a short while.

6. Carbuncles are found on the dorsum of the hands and fingers, the pathology depending upon the anatomical peculiarities of the skin in this region. The successful treatment of this form of infection calls for the early recognition of

the extent of pathology present and wide radial incisions with undermining of the skin flaps.

7. Felons may be either localized, involving only a part of the anterior closed space, or they may affect the entire space. The proportion in this series was 25 to 37 cases. Diagnosis usually offers very little difficulty. In the treatment, the important factors are the time for incising anatomical position of the incision. It would appear that the side incision offers the best chance for a symptomatic cure. Where a discharge continues after satisfactory drainage, the cause is usually to be found in an osteomyelitis of some part or whole of the distal phalanx. Twenty-one of a total of 62 presented this complication. Depending upon the extent of involvement, recovery results with conservatism in the mild cases and removal of the necrosed portion in the more extensive ones. With the epiphysis untouched, regeneration of at least part of the diaphysis occurs more often than realized. The reconstruction of deformed tender scars constitutes another phase of the later treatment.

8. Chronic localized superficial infections of the hand are not uncommon. While the *staphylococcus aureus* is the most frequently cultured organism, the cause for the failure of the heal is to be found locally and is, as a rule, thermal, mechanical, or chemical. Removal of the cause will, in the majority of cases, bring about a speedy recovery.

9. Suppurative tenosynovitis of the flexor tendon sheaths should be considered a major surgical condition. In its successful treatment the ingenuity and patience of the surgeon are frequently taxed to the utmost. When the subject is carefully analyzed, it appears that, until our knowledge of the anatomy, physiology, and pathology of the tendons and their sheaths is more perfect, the best end-results can be obtained by (a) an early diagnosis made possible by proper evaluation of physical signs; (b) early operation, preferably during the first twenty-four hours; (c) performing the operation in a bloodless field with the patient under general anaesthesia; (d) the use of properly placed and sufficiently long primary incisions; (e) making every attempt to avoid secondary contamination and infection during the post-operative period; (f) reducing the use of drainage material to a minimum; (g) the early employment of active and passive motion and, later, of other physio-therapeutic remedies

and devices; and (h) maintaining an attitude of constant close attention to details until treatment has been terminated.

The possibility of extension to the various bursae and fascial spaces must be borne in mind and, when involved, they also are treated along the same lines. The immediate and late results of tenosynovitis, in the last analysis, depends upon the ultimate fate of the involved tendons. Of 42 cases here reported, 30 sloughed some part or the whole length of one or both tendons, a percentage of 71.4 Accepting the principles of treatment as outlined, results can be improved by early diagnosis and operation.

10. Suppurative ulnar bursitis follows either a tenosynovitis of the little finger or an extension from the radial bursa, the latter occurring in 33.3 per cent of the cases in this series. Diagnosis is not difficult when the history and previous pathology are known and when the various objective findings are carefully evaluated. The treatment calls for properly placed adequate incisions both in the hand and above the wrist and the application of the same principle outlined under suppurative tenosynovitis. To secure free drainage in particularly virulent cases, the antero-annular ligament may be split. No untoward results followed this procedure. When the infection extends beyond this sac, in the hand the middle palmar space or the radial bursa or both become infected, and in the forearm the deep spaces become involved. Great difficulty is experienced in attempting to analyze end-results because of their direct bearing on the outcome of the infection in associated anatomical regions.

11. The observations recorded above apply equally as well to suppurative radial bursitis. Radial bursitis frequently follows traumatic amputations of the thumb. In making the incision, every effort should be made to avoid injuring the intrinsic muscles of the thumb so that the important apposing action may be preserved. It is rarely, if ever, necessary to split the annular ligament, for the upper end of the bursa can be thoroughly drained through the external lateral incision above the wrist. The end-results depend mainly on the outcome of the associated infections.

12. Thenar space infection is a most characteristic entity. The predominant diagnostic feature is the excessive ballooning out of the thenar eminence. Accepting the anatomical outline and

limits of this space, treatment consists mainly in making the incision advocated by Kanavel. A complete restoration of function can be expected in every uncomplicated case.

13. The diagnosis of infections of the mid-palmar space should rarely offer any great difficulty. The outstanding single objective finding is the replacement of the normal concavity of the palm by a convexity. Bearing in mind the anatomical boundaries and position of this space, the reason for using the incision recommended becomes apparent. In the great majority of uncomplicated cases there is every reason to expect an excellent end-result—80 per cent in this series. In other cases, the final outcome appears to be influenced by infections in adjacent tendon sheaths and bursæ.

14. The important facts determined by an analysis of the deep forearm abscesses were (a) that they were caused by extension from a pre-existing radial or ulnar bursa infection; (b) that the pus was situated deep to the flexor tendons; (c) that satisfactory drainage could be obtained only by the side incisions; and (d) that the final results were generally satisfactory.

15. Suppurative tenosynovitis of the common extensor tendon sheath is an uncommon condition. While not pathognomonic, the outstanding signs and symptoms are inability to flex the fingers and the absence of positive findings on the anterior aspect of the hand. Simple splitting of the sheath seems to form the basis of treatment. It is interesting to note that necrosis of the extensor tendons occurs rarely. The number of good late results is thereby greatly increased.

16. Osteomyelitis of the proximal or middle phalanges usually follows incompletely drained flexor tenosynovitis. The proximal interphalangeal joint is very often involved. The course of treatment followed will depend upon the extent of the disease, various cosmetic and economic factors and the progress of associated infections and will range from simple conservatism to amputation.

17. Infection of the palmar fascia is a rare condition, evidencing definite pathological findings and caused usually by the staphylococcus aureus. Treatment is simple and consists of incision with removal of the necrosed fascia. The results are good.

18. Phlegmonous lymphangitis is a severe lymphatic infection on the dorsum of the hand,

forearm and often on the arm, accompanied by necrosis of the subcutaneous tissues, superficial fascia and, sometimes, large areas of skin. Marked systemic symptoms manifest themselves and are often severe enough to overwhelm the patient. Adequate drainage through multiple incisions, maintenance of the fluid level of the body, the use of the Carrel-Dakin technique and transfusions are the main factors in treatment.

19. The intelligent treatment of hand infections demands a knowledge of the anatomy of the hand and the various pathological processes that may exist. Every effort should be made to obtain the best result possible, for the hand, from the economic, social and cosmetic standpoints, is one of the most important organs of the human body.

PITUITARY AND THYROID GLANDS.

The Treatment of Climacteric Symptoms by X-Irradiation of the Pituitary and Thyroid Glands, the British Journal of Radiology, Vol. XXIX, No. 289, August, 1924, p. 293. Translation by Dr. J. Borak, Central Radiological Institute of the General Hospital in Vienna.

The symptoms that develop after the removal or the cessation of the function of the ovaries are apparently due to a disturbance of internal secretion. X-ray treatment of the region of the sella and also of the thyroid region relieves these symptoms. It is also definite that X-ray treatment of the thyroid and sella reduces their secretions and it suggests that a hyperactivity of these glands is the cause of the symptoms of the climacteric. Results of this method of treatment have been good.

ROENTGEN RAY TREATMENT.

The Roentgen Ray in the Treatment of Giant Cell Tumors, by R. E. Herendeen, M. D., N. Y. City, Amer. Jour. of Roentgenology and Radium Therapy, Vol. XII, No. 2, August, 1924, p. 117.

Amputation has been done often for this condition and unnecessarily. Surgery implies thorough curettage of the lesion. Roentgen treatment offers much indeed. Cases were studied and treated at the Memorial Hospital, N. Y. City. He summarizes as follows:

1. The appearance of the giant-cell tumor in the roentgenogram can usually be relied upon to establish a diagnosis.
2. Treatment by radiation obviates, in many cases, the loss of the limb by amputation.
3. Treatment by radiation can be relied upon to produce growth-restraint, firm encapsulation

of the tumor, and relief of pain in the majority of the cases.

4. A more rapid ossification is brought about, with a more rapid restoration of function, than when some surgical procedure is the method of treatment.

5. Treatment by radiation is followed by a reaction evidenced clinically and roentgenologically, simulating rapid growth of the tumor. Pain and tenderness diminish as the reaction subsides, ossification takes place and function returns.

LESIONS OF THE COLON.

Diverticulosis and Diverticulitis of the Colon, by Chas. D. Enfield, M. D., F. A. C. P., Louisville, Ky., Amer. Jour. of Roentgenology and Radium Therapy, Vol. XII, No. 3, Sept., 1924, p. 242.

This lesion is a relatively common one but quite frequently overlooked, as at the finish of a barium meal gastro-intestinal study is often skimped, especially the study of the colon with the enema. The colon needs to be observed day after day with the meal and also before and after the enema. Retention in the diverticula of barium is often best seen after the barium enema has been expelled and for several days thereafter. Commonest location is the sigmoid, although the entire colon may be involved. Give rise to indefinite acute attacks generally mistaken for gallstones. May develop an abscess or acute obstruction. Confusion with malignancy is common. Occur in all portions of the gastro-intestinal tract but most common on the colon.

PUBLISHER'S NOTE

A MATTER OF CRITICAL IMPORTANCE

A point worthy of serious consideration has been brought out in recent discussions of the obstetric dose of pituitary extract. It is that unless the extract itself is of uniform activity, one make being assayed by the same standard as another, there can be no fixed dosage, not even a safe dosage, of the product as supplied by different manufacturers. The point is sustained by tests which show that some specimens on the market are three or four times as active as others. It would seem, therefore, desirable, in the interests of safety and efficiency, for the physician to do one of two things: Either adopt one make of pituitary extract and stick to it—Pituitrin, for example—or, ordering in original packages, be guided by the dosage recommended by the manufacturer, whoever he may be. The advantage of the former method is obvious: The physician has one pituitary product for all occasions, one that he can rely upon as a result of his acquaintance with it and with other products of the same house.

It is hardly possible to translate the dose of one pituitary extract into that of another, the different standards being unknown; the physician must, in practice, depend upon the manufacturer and his own experience. A pituitary extract can be dangerously active as well as hopelessly inactive; the *sine qua non* is a combination of activity with relative safety, and above all *uniformity*.

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ORIGINAL ARTICLES

CLINICAL EXPERIENCES WITH INSULIN IN THE TREATMENT OF DIABETES MELLITUS.*

(From the Clinic of the Bayside Hospital)

E. W. BITZER, A. B., M. D.,

Director, Division of Medicine, Bayside Hospital, Tampa, Florida.

The discovery of insulin has to a large extent revolutionized the treatment of diabetes. However, there are many problems connected with its clinical application that have not been satisfactorily solved. The diabetic who is taking insulin has lost his automatic adjustment and cannot eat as he pleases and take sufficient of the extract to maintain a normal blood sugar, but is obliged to take a fixed dose of insulin and a fixed diet.

The modern treatment of diabetes is based on the belief that it is a disturbance, either of the total metabolism, or that of carbohydrates only. Adherents to the total metabolism hypothesis advocate starvation methods. Those believing that only the carbohydrate metabolism is involved employ the high fat method or some modification of it. This does not imply, however, that the carbohydrate fat ration can be safely ignored.

There is a growing belief that many diabetes follow acute infections, and it is an accepted fact that most infections, particularly the pyogenic type, retard the function of the islets. On the contrary, it is definitely proven that regeneration or, at least, restoration of function occurs at times in clinical cases. Experimental observations on animals have demonstrated that regeneration is possible.¹ Clinical experience suggests that a persistent, high blood sugar leads to a progressive deterioration of the islet tissue, and a constantly maintained normal blood sugar level is apt to be followed by an increased functional capacity. This is not uniformly true, as there are cases that show little or no tendency to become more severe, or to improve, whatever the blood sugar level may be. No satisfactory explanation for this phenomena has been offered.

McLeod² suggests that the normal control of the secretion of the islets is either through the hormone action of an increased blood sugar or through the nervous system. It seems almost certain that both factors are capable of influencing the activities of the islets.

All clinical evidence tends to prove that insulin acts in two ways. It causes a withdrawal of sugar from the blood and its storage in the muscles and liver, and it accelerates the combustion of glucose, and incidentally, the normal metabolism of fats. One of the questions that has not been satisfactorily answered, is the effect of insulin on the pancreatic secretion. It has been thought that it might be inadvisable to reduce the blood sugar to too low a point on account of the inhibiting effect on secretion. Contrarily, it may be argued that this rests the pancreas and ultimately tends to improve its function. Our experience suggests that this is the case and that it is often of value to reduce the blood sugar below 100 mg. It has been apparent that there are two classes of cases. First, those with fixed islet secretion, in which insulin administration, apparently, has no influence on pancreatic secretion. Second, the mobile group, in which insulin administration, apparently, is followed in the beginning by decreased pancreatic secretion. Later, after the islets have rested, there is a marked tendency to increased functional capacity.

INDICATIONS FOR THE USE OF INSULIN AND CLINICAL METHODS

There are six classes of cases suitable for insulin therapy:

1. Coma or severe acidosis.
2. All cases that are unable to maintain a blood sugar of 160 mg. or less on a properly balanced diet, containing 70 gms. of carbohydrate.
3. Certain individuals that are so constituted that they will not follow a severely restricted carbohydrate content of the diet.
4. Cases showing emaciation, in which it is advisable to allow a gain in weight.
5. Cases during the course of acute infections.
6. Cases subjected to surgical procedure.

At present, the only effective method of administering insulin is hypodermically, one to four

*Read before the Fifty-first Annual Meeting of the Florida Medical Association, held at Orlando, May 15, 1924.

or more times daily, fifteen to thirty minutes before meals. The maximum effect is produced in three to four hours. The duration varies from six to twelve hours.

The question of diet is an important one. Aside from cases showing severe acidosis or coma, two procedures are available. First, by the use of a system of diets, such as Joslin's,³ to get the patient sugar free. The diet is then increased until sugar appears in the urine. Sufficient insulin is then administered to keep the blood sugar normal and to take care of subsequent additions to the diet. Second, fixing the diet at an arbitrary point and rapidly increasing the insulin until the blood sugar becomes normal. Later, adjustments are made as required.

In the treatment of coma, 20 units of insulin are given intravenously and 20 subcutaneously as the initial dose and subsequent doses as necessary, controlled by frequent blood sugar determinations. In the earlier cases, carbohydrates were given as a buffer, but Joslin⁴ has shown that this is unnecessary and requires a larger dose of insulin.

The laboratory technique necessary in fixing the dosage may be divided into three types: First, controlling the dosage entirely by blood sugar determinations. Second, the combined method—frequent examination of the urine until it becomes free of sugar. Following this, blood sugar determinations are used to fix the blood sugar level. Third, the method advocated by Page⁵ based on the Benedict-Osterberg quantitative urine sugar determinations.

The method we are now using is as follows: On entrance, the patient is put on a basal requirement diet containing 50 gms. of carbohydrate, independent of the 58 per cent protein factor. Initial blood sugar determinations and C-02 combining power are made. After a period of observation, insulin is begun, and controlled by two hour examinations of the urine until it is free of sugar, then by blood sugar determinations, both fasting and after the morning or noon meal. The diet and insulin are then increased simultaneously until a suitable diet for the requirements is reached. Our policy has been in fixing the final diet to be liberal with the carbohydrate content, and to be sure sufficient calories are available to maintain the body weight under normal activities. Sufficient insulin is given to keep the blood sugar under 145 mg. per 100 cc. blood. In severe cases, where a liberal diet is given, the blood

sugar has a tendency to run up during the night. In these cases, two to six units are given at midnight until the pancreas is able to maintain a normal sugar level under fasting conditions.

ANALYSIS OF 18 CASES TREATED WITH INSULIN

The maximum and minimum morning blood sugar on admission was 666 mg. and 181 mg. per 100 cc. blood and on dismissal, 182 and 102. The lowest blood sugar noted during treatment was 69 mg. Mild symptoms of hypoglycæmia were noted only once with a blood sugar of 74 mg. The average kidney threshold for sugar was 178 mg.

The maximum dose of insulin was 280 units of H-10 in 24 hours, the smallest 14 units of H-10. The average 24-hour dosage of H-10 was 31 units, and of U-10, 44 units. Two cases received three doses daily, six received two doses and nine received a dose before each meal and an additional dose at midnight.

The average carbohydrate content of the diet was 110 gm. independent of the proteid content.

The following complications were present: Hypertension was found in four cases, albuminuria in sixteen, boils in one, infected tonsils in one, tonsilectomy was done once. Adiposis dolorosa was present in one case, hemiplegia in one, ulcer on foot in one, cataracts in one, and neuritis in one. Two cases showed evidence of arteriosclerotic heart disease and failure of the congestive type. One case showed tuberculosis of the lungs and one was complicated by encephalitis. The average age was 52. Two cases were under twenty. One of these cases entered the hospital in coma with a plasma C-02 power 11 per cent. The other, while not in coma, showed a severe acidosis, the plasma C-02 power being 32 per cent.

The average duration of hospitalization was 18 days. The maximum and minimum duration was 38 and 6 days, respectively.

The results achieved while in the hospital were satisfactory, except in one instance, in which the patient decided not to continue the treatment after five days. There were no deaths during the hospitalization period.

These cases have been under observation since their discharge from the hospital, from a few weeks to one year. The subsequent history shows that two severe cases have been absolutely unsatisfactory. In the coma case, this was due primarily to indiscretion in diet, but also to irregularity in taking the insulin. This boy was quite thin

previous to treatment, and has since leaving the hospital gained 40 pounds in weight. His physical condition remains good, but it is impossible to maintain a normal blood sugar level for any length of time. The second case, a boy 19 years of age, remained in normal condition for one month. Following this, his blood sugar was found to be 400 mg. The cause is as yet undetermined. Both of these cases show a disposition to get progressively worse when the blood sugar is above 180 and evidence of progressively increased pancreatic function while the blood sugar is normal. Once their blood sugar becomes definitely high, it is practically impossible to reach a normal level without hospitalization. Two cases show a partially satisfactory course. Occasionally, the blood sugar is high, but strict adherence to the diet and iletin dosage leads to a prompt return to normal. Eight have shown a disposition to maintain a normal blood sugar, constantly. Two cases showing cardiac failure died in the first six months after leaving the hospital. The cause of death was cardiac. The diabetic condition remained under control up to the time of death. Four cases have definitely been able to reduce the dosage of insulin, showing an improvement in pancreatic function. Two cases are apparently cured. One case, that of an elderly individual, of 10 years' duration with an initial blood sugar of 450 mg., two months after leaving the hospital, developed rather acute symptoms of hypoglycæmia. Following this, he discontinued the insulin and continued the same diet containing 100 gms. carbohydrate. Two weeks later, his blood sugar was 138 mg. and in three months, 125 mg. In case 2661, a severe chronic infection of the tonsils was present, for which tonsillectomy was done. He was discharged on a diet of 150 gms. carbohydrates and 16 units of insulin. After six weeks, he was able to discontinue the insulin and has remained normal since, in spite of a constant gain of weight.

The effect of insulin treatment on the complications of diabetes has not been definitely settled. The mass of evidence accumulating, however, suggests that the effect is most marked on the infections, chiefly tubercular and pyrogenic. The complications dependent upon changes in the nervous and arterial system may be arrested but are not likely to be entirely relieved.

PROBLEMS OF TREATMENT AFTER HOSPITALIZATION

There is no difficulty in maintaining a normal

blood sugar during the hospital period. There are some individuals, however, who are so constituted that it is impossible to get them to live on a fixed diet for any length of time, however liberal it may be. Our experience has demonstrated that women are more faithful in carrying out the dietetic instruction than men. Certain cases have been careless about the insulin, showing a disposition to leave off doses, and even to change the dosage without advice. The most serious problem we have encountered, however, is in the youthful transgressors in whom, once the blood sugar becomes markedly elevated, large doses of insulin are required, temporarily, to bring the sugar to a normal level.

CONCLUSIONS

1. In order to get the best results, it is necessary to maintain a blood sugar level night and day not above 145 and preferably between 100 and 120 mg.
2. The best method of treatment is that which is easiest for the patient.
3. The diet should be as liberal as conditions will permit.
4. Insulin offers a chance for recovery, and definite relief to those who are faithful and conscientious in carrying out the treatment.

(Credit is due Miss E. C. Noxon and Dr. Herbert R. Mills for valuable assistance in the preparation of this paper.)

REFERENCES

¹McLeod, J. R., and Banting, F. G.—The Antidiabetic Functions of the Pancreas and the Successful Isolation of the Antidiabetic Hormone—Insulin.—Mosby & Co., St. Louis, 1924, page 27.

²McLeod, J. R., and Banting, F. G.—The Antidiabetic Functions of the Pancreas and the Successful Isolation of the Antidiabetic Hormone—Insulin.—Mosby & Co., St. Louis, 1924, page 54.

³Joslin, Elliott P.—The Routine Treatment of Diabetes with Insulin.—J. A. M. A., 80: 1581, June 2, 1923.

⁴Joslin, Elliott P.—Diabetic Coma and Its Treatment.—Med. Clin. N. Am., Vol. 7, page 637, Nov., 1923.

⁵Page, Irvine H.—On the Normal Urine Sugar Curve in Normal Individuals, Borderline Diabetics and Severe Diabetics Under Insulin Treatment.—Jr. Lab. and Clin. Med., 8:631, July, 1923.

DISCUSSION

Dr. J. B. Wallace, Tampa:

I think Dr. Bitzer has covered the question of the administration of insulin quite thoroughly in this paper of his. I think that we will all agree that any case of diabetes that is severe enough to require insulin should be hospitalized, and that it should be kept in the hospital for the purpose of urinary and blood pressure observations, and for diet. I think that one very important thing in Dr. Bitzer's paper is the selection of cases for the use of insulin. I do not think there could be any possible criticism of the cases Dr. Bitzer referred to.

I think there is a certain type of case that is not likely to follow any careful dietetic instruc-

tions, and I do not think that type of diabetic is likely to do well under any treatment we can use. My personal preference, in determining those to whom insulin should be given, has been in putting the patient on a test diet and handling them that way, if possible, except in cases that are emergencies. I am of the opinion that in spite of insulin, the treatment of diabetes is still very largely a dietetic problem.

Dr. J. V. Freeman, Jacksonville:

Insulin marks a tremendous step forward in the management of diabetes, but it is not the complete answer. We need to discover the exact etiology of the disease in order that we may take the proper steps toward prophylaxis.

As mentioned by Dr. Bitzer, it seems probable that our old friend, focal infection, plays a considerable part in this disease. Probably if we give attention to that particular factor of foci of infection and the eradication of them, we will see some diminution in the number of cases of diabetes.

The tremendous value of the insulin is, of course, in the ready and prompt control of acidosis and coma. Its next great value is in increasing the tolerance of those patients who are not able properly to handle their maintenance diet. The idea also prevails and seems firmly based that the use of insulin holds the blood sugar within normal limits, giving rest to the pancreas so that it can recover a certain amount of its function. This seems to be more true in young cases than in the old ones.

As Dr. Wallace has just stated, the principal problem of diabetes is still the dietetic one. The use of insulin imposes on us more than ever before the careful study of the diet and the careful test of the patient. We must determine the patient's reaction to a given diet—to his test diet and to his maintenance diet. It is a very troublesome proposition, by that I mean that it is a painstaking proposition to study out the proper diet for these cases, but there is no other course left to us. We shall have to become perfectly familiar with the calories. It would be just as irrational for us to tell the patient to leave off his sugars and starches and take this much insulin, as it would be to tell the man with rheumatism, "Well, just let it take its course, you can't help yourself," and get our fee. The instruction of the patient is, in my judgment, a particularly important factor. While these patients are hospitalized we have the best opportunity in the world

to instruct them in the basic principles of diet, the making of examinations and tests for their own experience, the administration of the insulin, and in acquiring some degree of familiarity with the symptoms of their disease.

I think it is safe to say that at least 50 per cent of the cases of diabetes are successfully managed and should be managed by diet alone. Insulin should be reserved for the severe cases, the cases with acidosis and coma, for the cases in children, and for those cases of diabetes who have developed infections or are to be operated upon.

Dr. T. Z. Cason, Jacksonville:

I feel that I would like to emphasize what Dr. Wallace stated with reference to the paper under discussion, and that is patients (and I do not agree with the paper in this point) who are not willing to be very careful of their diet should not be given insulin. If you are not going to take the time to instruct the patient how to handle his diet in the treatment of his disease, and to calculate it into calories and divide the carbohydrates, proteins and fats, and to make the exact determination right throughout, how are we to know that he is not willing to follow it, and should not be given insulin?

I had the pleasure of watching Joslin for three weeks last fall. He is of the opinion that it is a luxury to give insulin to a patient who is over 40 years of age. Under 40 years old, where it is needed, it should be given. I also feel that insulin has been administered too indiscriminately, and I do not think that a doctor should give it unless he, himself, is able to calculate the diet just as he should instruct his patient to do.

Dr. H. H. Harris, Jacksonville:

I would like to ask Dr. Bitzer if he has observed that a number of diabetics who are taking insulin complain of diminished vision, which seems to clear up as soon as the insulin is discontinued. Quite a few of my patients have been affected this way?

Dr. E. W. Bitzer, Tampa, (closing):

One of the cases reported as arrested or partially cured, an elderly subject, emphasizes the fact that there can be marked changes in the pancreatic function even in the elderly diabetic. As I recall he was in the neighborhood of 65 years of age. He had had diabetes for about ten years, and his blood sugar was 450 mg. After a comparatively short period of treatment, possibly two months, he was able to discontinue the

insulin completely, and maintain practically a normal blood sugar.

The question as to who shall be given insulin is undoubtedly one of the most important of the problems connected with insulin. If we are to obtain good results, it is, of course, necessary for the patient to follow instructions as to diet, reasonably accurately.

As to Dr. Harris' question in reference to an increase in diminution of vision following the use of insulin, in cases showing impairment of vision my experience has been that there has been no effect on vision in these cases.

SPIROCHETOSIS BRONCHIALIS, WITH REPORT OF CASE.*

J. BROWN WALLACE, M. D.,
Tampa, Florida.

W. M. B., male, white, age 17, occupation, student. Seen November 25, 1923.

History: Cold and fever followed by pneumonia ten months ago. Has had since that time cough with moderate expectoration of thin, watery, odorless sputum. Slight hemoptysis two months after pneumonia, and occasional blood stained sputum since. Easily tired out. Weight prior to pneumonia, 140 pounds; present weight, 130 pounds. No other symptoms.

Previous history: Ordinary diseases of childhood. Had never been out of Florida.

Physical examination: Negative except for high-pitched inspiratory rales along right border of sternum. Mouth, teeth, gums and throat were normal. The red, white and differential blood counts were within normal limits.

Examination of urine was negative.

Examination of sputum showed many spirochetes resembling those of Vincent's angina.

Examination of stool: Positive hookworm; many ova found.

X-ray report: "Marked thickening around the hilæ and an increase in density above this level on both sides, especially on the right. The markings are unusually distinct and extend well toward the periphery. There are several areas on both sides above the level of the fourth rib strongly suggestive of pulmonary tuberculosis. The descending bronchial tree outlines can be

seen to the level of the diaphragm and well out to the cortical portion."

Repeated examination of the sputum showed constantly the presence of numerous spirochetes; fusiform bacilli were not definitely demonstrated in any specimen. All specimens were negative for tubercle bacilli.

The patient was given treatment for the hookworm infection, repeated in one week: .6 gm. neoarsphenamine was given intravenously every third day for three doses—after an interval of one week the neoarsphenamine was repeated twice.

Since that time no spirochetes have been found; a month later patient was free of cough and fever and has remained well since.

Spirochetosis bronchialis or hemorrhagic bronchitis was first described by Aldo Castellani from Ceylon in 1906, when he reported two natives subject to recurrent attacks of hemoptysis for several months, with sputum negative for tubercle bacilli, but containing large numbers of actively motile spirochetes.

Since that time numerous cases have been reported from various tropical countries.

During the World War many cases were observed in Europe among native troops coming from the East as well as among the European forces who had never been to the Colonies. Prior to that time the disease had attracted little attention in Europe. J. R. Risquez, Caracas, Venezuela, reported in 1923 seventy-six cases found in Caracas and vicinity.

In 1910 Rothwell described four cases in the United States, of what he termed bronchial Vincent's angina, in which spirochetes and fusiform bacilli were found in the sputum. As will be pointed out later, these cases probably represent a different variety of spirochete infection from that under consideration. In 1921 Levy reported two cases of broncho-pulmonary spirochetosis from Galveston, Texas. One of these cases had had hemoptysis at intervals for fourteen years. Bloedorn and Haughton in 1921 reported four cases from the U. S. Naval Hospital at Annapolis, Md. A. E. Greer in 1923 reported another case from Houston, Texas.

There is a general acceptance of Castellani's description of three types of the disease; the acute, subacute and chronic. In the acute type there is moderate fever, rarely over 103, severe cough with scanty expectoration, which may contain traces of blood.

*Read before the Fifty-first Annual Meeting of the Florida Medical Association, held at Orlando, May 15, 16, 1924.

In the subacute type, which may last from two to several weeks, there is slight fever, troublesome cough with expectoration of pink jelly-like mucus or true hemoptysis. The physical signs as a rule are those of a simple bronchitis, but may be unilateral and closely simulate an early tuberculosis infiltration.

The chronic type may follow an acute or subacute attack, or more frequently it has a slow, insidious onset. The patient has a chronic cough, and expectoration which may contain blood. Frequently there is no fever, or there may be an irregular temperature. Physical examination usually shows only a few rales. The course of this type may be prolonged with periods of improvement, and even apparent cure.

The diagnosis is established by laboratory examination of the sputum. The spirochetes are easily found in specimens stained by the Fontana method, with carbol fuchsin, or with gentian violet.

Treatment: Arsenic in almost any form is reported effectual. On account of the ease of administration and the prompt results obtained, most observers prefer arsphenamine or neoarsphenamine intravenously. Dr. Risquez treated his cases with antimony and potassium tartrate solutions intravenously. Emetin has not proved effective.

A review of the literature of spirochete infections of the respiratory tract is apt to be somewhat confusing unless it is accepted that there are two varieties of spirochetes capable of producing pulmonary lesions, one which is essentially a tropical disease, but existing in the United States and probably considerably more frequently than is generally recognized, and the other due to an invasion of broncho-pulmonary tissues by the fusiform bacilli and spirochetes of the tonsil crypts and tartar deposit at the margin of the gums. Fishburg, Morris and Kline, in 1921, reported a series of cases admitted to Montefiore Hospital as tuberculosis. The symptoms and signs were those of pulmonary abscess with pain in the chest, high continuous fever, incessant cough and copious expectoration of offensively fetid sputum. Spirochetes and fusiform bacilli were found in the sputum and at autopsy in the pulmonary tissues.

Davis and Pilot, in an interesting study of the bacillus fusiformis and Vincent's spirochetes, conclude that under exceptional circumstances these organisms which are very generally pres-

ent in the crypts of the tonsils and the tartar deposits about the teeth, may become implanted in any adjacent tissues, producing gangrenous and putrid infections. They say "the question has been already raised as to the relation of Castellani's spirochetes to the spirochetes of Vincent that occur in the putrid lung conditions associated with fusiform bacilli. At the present moment, the idea prevails that the two are different and that the former is peculiarly a tropical spirochetosis in which symbiosis with fusiform bacilli does not play a significant role."

Up to the present time very few cases of bronchial spirochetosis have been reported from the United States, but very probably its occurrence in the South is being overlooked.

The presence of spirochetes in specimens of sputum examined for tubercle bacilli at the Tampa laboratory of the State Board of Health, is not an exceedingly rare finding. No report, however, of the presence of spirochetes in sputum is made. The subacute and chronic types of this infection have commonly been diagnosed as tubercular infections, the history and occasionally the physical signs giving quite a characteristic picture of mild tuberculosis. The differentiation can only be made by laboratory examination of the sputum.

Since the infection is so amenable to treatment as compared to tubercular infection, it is most important that the possibility of this disease be generally recognized.

REFERENCES

- Castellani, Aldo—Note on a Peculiar Form of Hemoptysis with Presence of Numerous Spirochetes in the Expectoration, *Lancet* 1:1384, 1906.
- Risquez, J. R.—Spirochetal Bronchitis in Venezuela, *Gaceta Medica de Caracas*, 30:193 (July 15), 1923.
- Rothwell, J. H.—Bronchial Vincent's Angina, *J. A. M. A.*, 54:1867 (June 4), 1910.
- Levy, M. D.—Pulmonary Spirochetosis (Castellani), *New York, M. J.* 113:186 (Jan. 29), 1921.
- Bloedorn, W. A., and Haughton, J. E.—Bronchial Spirochetosis, *J. A. M. A.*, 76:1559 (June 4), 1921.
- Fishberg, Maurice, and Kline, B. S.—Spirochetal Pulmonary Gangrene, *Arch. Int. Med.* 27:61, 1921.
- Davis, D. J., and Pilot, I.—Studies of Bacillus Fusiformis, and Vincent's Spirochete, *J. A. M. A.*, 79:944 (Sept. 16), 1922.
- Greer, A. E.: Spirochetosis Bronchialis; Report of Case. Southern Medical Association, 1923.

DISCUSSION

Dr. R. H. McGinnis, Jacksonville:

Dr. Wallace has reviewed and given a synopsis of the literature of spirochetosis bronchialis since the disease was first brought to the attention of the medical profession by Castellani.

There is still much confusion among scientists

about the invasion of the body tissues by spirochetes, the character of the spirochetes and their classification. Some writers seem to think that the organism producing the disease in question is a saprophyte under normal conditions and becomes pathogenic from causes not yet determined.

This disease, however, when once developed, must be differentiated from pulmonary tuberculosis as many of the symptoms and findings of the examination are almost identical. The spirochete is usually found in the sputum of patients with the disease in large numbers by some specific staining agents.

While we know little about the spirochete of this variety we can treat the disease successfully by some preparation of arsenic.

It is possible that many cases of this disease are never diagnosed correctly, and are reported, if reported at all, as tuberculosis.

Dr. W. C. Blake, Tampa:

Dr. Wallace has presented a very interesting paper, because it brings to our minds the frequency with which this disease is met, though not always recognized.

Clinically they are diagnosed as tuberculosis, and to detect them it is necessary to do more than make a routine examination of the sputum for tubercular bacilli. The laboratory man should be instructed always to look for and report such things as spirochetes, fungi, and ova. I had the opportunity of examining one or two specimens from Dr. Wallace's patient, and these contained myriads of spirochetes.

As has been stated, these cases are clinically recognized as tuberculosis, but there are two forms of differentiating between them. One method is the X-ray, but X-ray evidence is usually lacking. The other is that the sputum in tuberculosis is usually thick, heavy and mucopurulent, whereas it is usually thin and watery in these cases.

Let us remember that every clinical case of tuberculosis may not be tuberculosis, and that the laboratory man can assist us in occasionally finding one of these cases.

Dr. Barnes:

I first became interested in this question of the non-tuberculous type of referred diagnosis of tuberculosis, while at Fort Baron.

I might say in passing that from our experience there in working with actinomycosis it would simulate almost any other organism. We found many fusiform bacilli in the sputum of

our patients, and later proved them to be actinomycosis organisms. In this connection I want to point out that this particular organism is very hard to grow, our laboratory technicians requiring several weeks to finally get the work across. Therefore many times our laboratory people have been without these organisms in the work of bacterial study.

Now, the importance or purpose with which we took up the question there was to find out something of the percentage, which we could not find very definitely in the laboratory. So we set aside four wards containing fifty-four patients each, or two hundred and sixteen cases, just as we happened to have them, and made a study of these two hundred and sixteen cases, and found some thirty per cent having the fusiform bacilli, actinomycosis, or your spirochetes. Now this is very important. If we are going to be able to find thirty per cent of our so-called tuberculosis involved in this particular form of trouble, remember that the ultimate diagnosis of tuberculosis was not complete in these two hundred and sixteen cases except, for instance, by the finding of tubercular bacilli in the sputum. Therefore the finding of thirty per cent of these, or a little more than sixty cases, represents something of value. This seems of further importance in regard to the entire question of tuberculosis. That is, that practically forty-two per cent of all charity today is caused by tuberculosis in some form, and this brings up an entirely different angle to the cause of tuberculosis in any particular area.

There is a statement made by Dr. Harris, or one of the men discussing Dr. Harris' very valuable paper, and that is in regard to the use of iodine and neosalvarsan. I think you are going to find that of value in this class of patients, but you are not going to find iodine of any particular value in strictly tuberculosis. We treat this one very exceptionally, and I want to emphasize the importance of the use of iodine in this class of cases, particularly because most of our cases cleared up under iodine.

Another point in diagnosing these cases, please remember that most of them present a very definitely large area of involvement with a comparatively low toxicity. In other words, Dr. Wallace in his description of the case tells us that practically all lobes of both lungs in that case were involved and were well up in the active stage, but that the toxicity was very low, practically secondary. Another point of interest that has

been brought out shows that there is not the terrific loss in weight in this class of cases.

Dr. J. B. Wallace, Tampa, (closing):

I do not think there is anything further that I can say, but I do want to call your attention to the possibility of this type of respiratory tract infection existing here. Undoubtedly this patient got it from somebody else, as he had never been out of the State. So at least there is one more case here that has been overlooked. That is all that I can say.

HIGH BLOOD PRESSURE FROM THE STANDPOINT OF THE OCULIST.*

MICHAEL PRICE DEBOE, M. D.,

Miami, Florida.

In dealing with this subject, which is as interesting to the specialists as it is to the general practitioners, there are three points which I should like to bring to the attention of this scientific assembly. They are: The two cardinal signs seen in the fundus, and a suggestion as to cause of high blood pressure.

Many patients, who consult the oculist for symptoms referred to the eye, present these unmistakable signs of hypertension and are surprised when told of it, as they, probably, have never been sick before in their lives. In making routine fundus examinations, many conditions are diagnosed which the patient or his physician never before suspected.

The first sign is commonly called the pressure sign. It is elicited by following a vein from the disc to a place where an artery crosses over. From one to three arterial diameters (taking the artery at point of crossing as standard of measurement) on either side of the artery the blood is pressed out of the vein. The significance of this condition is, that there is an imbalance between the normal relative intra-arterial and intravenous pressures. This has been proved clinically to be primarily a sign of high blood pressure. It occurs in arteriosclerosis, but you can readily see why. In cases where arteriosclerosis ultimately takes place this sign appears first. It occurs in hypertension of the menopause and passes if this condition clears up. In personal

observation it is almost as positive as the reading of the blood pressure instrument.

The second sign is actual arteriosclerosis of the retinal arteries. In the first stage there is an irregularity in the arterial walls. Later there is a beading of the arteries. Then finally there is an obscuration of the red lines. This last is due to infiltration of lime salts into the walls of the artery, making it opaque. This sign, in the light of observation and experience, practically means high blood pressure.

As the retinal arteries can be taken, practically, as an index to the terminal arteries all over the body, this sign is of vast prognostic importance. We can readily see, the chances are, that if the terminal arteries are sclerosed there can be no let up in blood pressure till the heart breaks down. This is not an infallible sign, but is the general rule. O'Hare and Walker, in their masterly paper in the archives of Internal Medicine, tabulated a number of cases that had peripheral sclerosis with a low blood pressure, but in the majority of cases where there was retinal sclerosis, there was or had been hypertension.

We, therefore, draw certain conclusions from our own and the findings of others: First, high blood pressure does not necessarily cause arteriosclerosis because we can have arteriosclerosis without it. Second, peripheral sclerosis does not cause high blood pressure, but terminal sclerosis, if sufficiently extensive, may cause a continuation of hypertension until the heart breaks down. And lastly we may conclude that the condition of the retinal arteries comes next to the blood pressure instrument in the diagnosis of this condition, and is pre-eminently the best single prognostic sign except the findings in the urinalysis.

As to the cause of this condition, let us remember that this is merely a suggestion, as there is nothing as yet proved.

The evidence in favor of the fact that it is not caused by an indiscrete or imbalanced diet is obvious. If this was not so, then in a symptom complex as clearly defined as chronic cardiac-vasculo-renal disease, the most important symptom of which is hypertension, we would as invariably get it as a result of a certain diet as we get scurvy with a certain diet, but we do not.

If alcoholism or nerve strain were specific causes then why do not all patients develop it as they do delirium tremens or neurasthenia if these two respective causes were carried to theirulti-

*Read before the Fifty-first Annual Meeting of the Florida Medical Association, held at Orlando, May 15, 1924.

mation? Conversely, why is it that vegetarians, total abstainers and people living under conditions very favorable to their nervous systems, do have it?

We may say that it is due to some toxic substance in the blood stream acting upon the muscular walls of the terminal arteries and heart or upon the vasomotor and cardiac centers. Or it probably has a specific action on the ductless gland system producing an imbalance in their different secretions or producing some new active principle in the secretion of one or more of these glands disturbing metabolism in this specific way.

In speculating upon the modus operandi of this condition we are reasoning from premises which have not been proved but assumed. In exercising our reasoning in this case, let us for a moment consider the parallel case of tetanus. We know that tetanus is caused by a specific organism because we have proved it. At the same time we have a definite symptom group by which we can make a diagnosis. In chronic hypertension, after excluding all other probable causes except the parasitic, we have a symptom complex which points as conclusively to a specific infection as its cause, as we have in the case of tetanus.

The only evidence I can bring to bear to substantiate my suggestion of a specific infection as the cause of the condition under discussion, is the fact that of all the cases I have seen in the last five years, also those seen by Dr. Lowe, approximately ninety per cent presented a demonstrable focus of infection in the tonsils or teeth, the infections in the tonsils predominating.

That does not mean that any focal infection may cause high blood pressure, because we have all seen hundreds of cases of focal infection whose blood pressure was normal. But it is suggestive, that in the cases of hypertension where such a high percentage of them show focal infection, that some of the organisms gaining entrance into the body through these channels may be the offending ones.

In conclusion, we know as much about the specific germ causing high blood pressure as our forefathers knew about the cause of malaria a century ago, but let us hope that the future will bring us promised facts, upon which we will be able to base a specific treatment.

Summary: By examining the retinal arteries we can get a diagnosis and a tentative prognosis of high blood pressure. And the symptom complex in chronic hypertension is so clearly defined

that in the light of past experience and observation, reason suggests that it is a symptom of a disease caused by some specific organism.

DISCUSSION

Dr. Shaler A. Richardson, Jacksonville:

I think Dr. DeBoe has brought us a very important message in this masterly dissertation on the fundus findings in hypertension and arteriosclerosis. In the ophthalmic findings one is often able to definitely diagnose arteriosclerosis, but by putting aside all other means of diagnosis and using this method alone, we occasionally fail to make a diagnosis.

The question of etiology, of course, is a most important one, and is quite obscure. Up to the present time I think our best bet can be stated in the three T's—teeth, tonsils and toxemia.

One of the most impressive things about the findings in the retinal circulation may be summed up in the statement that the optic nerve and retina is but a prolongation of the brain, and any changes in the vascular system of the retina indicates practically the same condition in the cerebrum.

Knapp once stated that in any case in which he observed retinal hemorrhages he considered the prognosis a serious one. Gies observed seventeen cases of retinal arteriosclerosis over a period of four years, all of which died from apoplexy. Raehlman states that in two hundred and ten cases of retinal sclerosis that he had observed, which have gone to post mortem, he had found cerebral sclerosis in 50 per cent.

I think that the cooperation between ophthalmologists and men practicing general medicine should be a little bit more whole-hearted. Frequently, as ophthalmologists, these cases come to us stating that they have had a sudden loss of vision, probably within twenty-four or forty-eight hours previous to the examination. On examination of the fundus we find that they have had very extensive retinal hemorrhages. These hemorrhages may involve the macular region, greatly reduce the vision, or they may be in the periphery of the fundus and not involve the central vision.

In my opinion, when these cases are observed by the ophthalmologist, they should be immediately referred to the internist, and they should be treated conjointly. They are just as much an emergency as an acute appendix should be to the general surgeon, for the reason that practically

all of the patients that we see with retinal hemorrhages from arteriosclerosis have a very high blood pressure, and if the patient is up and moving about and no effort is made to reduce the pressure, you are very sure to have more hemorrhage.

Dr. W. R. Warren, Key West:

I just want to say one thing in emphasizing what Dr. Richardson has just stated in regard to the importance of all cases of cardiac-renal disease being referred to the ophthalmologist.

I have had the pleasure and opportunity in a great many instances of referring my cases to Dr. DeBoe with a great deal of help, and in turn he has sent me a good many of my cases that I had not seen for some time on account of their not being sick enough to come to a doctor except for failing eyesight. In that way my first knowledge of the condition of the cardio-vascular system was given me through the ophthalmologist. So I think it would be well for any general practitioner in any case of cardio-vascular-renal disease to refer the case to the ophthalmologist for his opinion and report, because his findings have an important bearing on prognosis.

Dr. M. P. DeBoc, Miami, (closing):

Chronic cardio-vascular-renal disease accompanied by the symptom of high blood pressure is a definite symptom complex. I am suggesting that it is due to infection by some specific organism or organisms, acting on the nerve centers, ductless glands or the circulatory system and coming from some of the common locations of focal infection.

I feel that we are due this condition careful consideration in our research work.

CISTERN PUNCTURE, ITS USES IN DIAGNOSIS AND TREATMENT.*

H. MASON SMITH, M. D.,

Tampa, Florida.

The necessity of reaching the subarachnoid space at other points than the lumbar sac has given rise to many procedures, such as puncture in the thoracic and cervical regions, puncture through the sphenoidal fissure and introventricular puncture.

*Read before the Fifty-first Annual Meeting of the Florida Medical Association, held at Orlando, May 15, 1924.

Until recently, there has been nothing written in reference to puncture at the cistern, although this has been a common method of obtaining spinal fluid from animals. In 1919, Wegeforth, Ayer and Essick, after considerable preliminary study on the cadaver, published a method of approach to the cisterna magna and since that time this procedure has been in common use. This method has been found easy and no serious consequences or alarming symptoms have occurred when the technic developed by these gentlemen has been closely and intelligently followed.

The greatest advantage in going into the cistern is the fact that the cisterna magna is really the distributing center of the spinal fluid circulation, and if there is a focus at any point in the cerebrospinal nervous system, one is more likely to find abnormalities in the spinal fluid there before it will appear elsewhere. The spinal fluid originates in the choroid plexus, passes down through the ventricles into the cisterna magna and from there goes to the cortex and to the spinal subarachnoid cavity.

TECHNIQUE

Cistern tap is really not more difficult than a lumbar puncture, as a much greater space is afforded for entrance there than is in the lumbar space.

The patient is placed on his side as for a lumbar puncture, the same antiseptic preparation and anesthetization with procaine as for a lumbar puncture. The thumb of the left hand is placed on the spine of the axis, the needle is inserted just above the thumb and is directed forward and upward in line with the external auditory meatus, until the dura is pierced. When the cistern is entered from this angle there is a distance of $2\frac{1}{2}$ to 3 centimeters between the dura and medulla. It is a good idea, in order to obtain entrance at the proper angle, to direct the needle a little higher and if the occiput is struck, to withdraw slightly, depress the needle just enough to get by. When the dura is pierced, the same "give" is felt as in a lumbar puncture.

The needle used is a regular lumbar puncture needle of 18 gauge. There is less variation in depth of tissue traversed in going in to the cistern than in going into the lumbar sac, the distance is usually between $4\frac{1}{2}$ to 5 centimeters, never over six, so a faint circular scratch is made on the needle at 5 or 6 centimeters for judging the distance.

DIAGNOSTIC PROCEDURE

The cistern puncture is of most value in the diagnosis of cord compressions, spinal bloc of post meningeal adhesions, and syphilitic exudates. In ascertaining these conditions, a combined cistern and lumbar puncture is required, also the use of spinal fluid manometers. When there is a cord compression, a meningeal adhesion of a syphilitic exudate existing between the cervical region and lumbar, there may be the same pressure at these points, but on the withdrawal of 5 cc. of spinal fluid from the cistern, a reduced pressure will follow in the cistern and not at the lumbar tap. Jugular compression will cause a rise of spinal fluid pressure at both points when there is no obstruction, but when there is a bloc or partial bloc, this rise is seen only at the cistern, the lumbar pressure remaining the same. Abdominal compression raises the pressure at the lumbar space in case of bloc, but will not raise it at the cistern. There is an oscillation of one millimeter with every pulse beat and four with each respiration at both cistern and lumbar regions when there is no bloc. In cases of bloc, this oscillation is only at the cistern. There is also found a difference in the cell count and protein content of the specimens of spinal fluid taken at the cistern and lumbar spaces.

TREATMENT

There is possibly more promise in the treatment of meningitis by serum injection into the cistern than by any other route. Clinical evidence points toward the cerebral rather than spinal involvement in the beginning of meningitis. Hence, it would be advantageous to get the serum to the most infected areas as early as possible, and when the infection is cerebral this can be done more readily by the cistern route. It has been shown that substances introduced in moderate amount under normal pressure into the lumbar sac reach only a little higher than the base of the brain. I have seen 20 cc. of serum introduced in the lumbar sac, which does not appear in the cistern during the period of cistern injection or cistern puncture, which was about twenty minutes. It has been shown by Ayer that injections of 30 cc. of India ink into the lumbar sac of a cadaver barely blackens the base of the brain, but when this same amount is put into the cistern, it not only blackens the base of the brain but also the cerebral cortex, so theoretically, this is the most direct route for injection of serum in meningitis.

Irrigations of the subarachnoid space have been done by Eagleton of Newark, N. J., the injections being made at the point of infection in the cerebrum and drained out through the cistern and lumbar spaces, a double puncture being done in these places. He reports a number of recoveries from this operative treatment. The irrigations are frequently made in fulminating types of meningitis by an injection of a normal salt solution into the system and drained up in the lumbar space. This removes the toxic purulent spinal fluid, which is replaced by a clean normal salt solution and aids the phagocytic functions of the arachnoid membrane. The value of this procedure is still a matter of speculation and not enough work done to obtain any valuable statistics.

DISCUSSION

Dr. J. Q. Folmar, Chattahoochee:

In view of the points which Dr. Smith has brought out, it would not be amiss to emphasize one point slightly which he did not bring out, and that is that this procedure is not one that is free from danger, and it is not a procedure which is not liable to be met with serious consequences unless one is familiar with the anatomy in this region, and also the method proceeding in doing the puncture. No one is justified in attempting a cisterne puncture on a live individual until he has thoroughly studied it first by operating the cadaver.

The most important use of the cisterne puncture, in our mind, is in the treatment of meningitis, where you are able to get the serum in more direct contact with the infected area than you are in the lumbar puncture.

Another fact, which is well worth consideration, is that these patients should remain in the recumbent position for some time following the cisterne puncture. So far as I am aware, all of the deaths or untoward symptoms that have been noted following this puncture have been in patients who have immediately resumed the upright position following it.

Dr. J. H. Randolph, Jacksonville:

My experience with the cisterne puncture is very limited, and I want to say that I have listened with a great deal of pleasure to these men who have had a great deal more experience with it than I have.

Unfortunately my experiences have not been very encouraging. They were limited to only

two cases, both of which were cases of meningitis and each of a severe type, and cisterne puncture was undertaken only as a last resort. I might add that it was the last resort; both patients dying probably one or two hours after each of them.

As to the advantages of cisterne puncture in meningitis, I am not as yet fully convinced. As Dr. Smith says, it certainly allows you to bring the therapeutic substance into contact with the fluids there at a point that is possibly more advantageous, and if resorted to early all right, but certainly not in cases of extreme infection or inflammation where the foramina into the ventricles have been blocked or partially blocked. In such cases I do not feel that substances injected into the cisterne can reach the meninges over the brain, nor can the ventricles be drained any more effectively than through spinal puncture. And on the other hand if said foramina are not blocked, the drainage through the spinal canal is just as efficacious and slightly less dangerous.

Dr. H. Mason Smith, Tampa, (closing):

I would like to state in regard to the danger of this procedure, that in going into the cisterne by this method you point the needle directly above the tenth nerve. Since there is a distance of $2\frac{1}{2}$ cm. above the medulla and since there is a very large space laterally, you can, by a little experience, acquire a certain amount of skill in doing this puncture.

On one occasion I have seen quite a little blood come out from the cisterne puncture, but at that time nothing serious happened to the patient. When we get blood, as a rule when doing the cisterne puncture, and it appears that we will get a little pressure in the medulla, we quickly withdraw the needle before piercing the medulla. It is better not to get in at all than to have to remove it afterward.

CURETTAGE.

G. H. EDWARDS, M. D.,
Orlando, Florida.

In this brief paper I do not propose to go into any special discussion regarding the uses and abuses of the curette. I am simply going to emphasize several features of its use which have proved very satisfactory in my hands.

I might state that the curette is about 80 years

old. It was first introduced by Recamier in 1846 and like many new instruments, systems of treatments and drugs, it has been advocated as a cure-all for probably every known pathological condition in the pelvis and like all other innovations, it has its uses and its limitations. These are being made more and more clear, not only to those who are doing experimental work, but also to you and I, the general practitioners, for as we look back we recall certain cases in which today we would not use the instrument or we would use it in a different manner or at another period in the condition.

In 1807 Dr. John Stearns of New York discovered the specific action of ergot to induce contractions of the uterine muscles and from that time dates specific uterine medication. Previously, prayer, incantations, wafers, a pot of urine under the bed, etc., had been used to control uterine hemorrhage. It was nearly 40 years afterwards that the virtue of ergot was recognized abroad, but the curette immediately found favor everywhere.

Today the curette has practically three functions; its use in obtaining specimens of the endometrium; second, for the cure of leucorrhea and, third, to stop some types of uterine hemorrhage. In the first instance it still has its field; in the second, the work of Sturmnadorf, Polak, Colbretson and others would seem to lessen its field of usefulness. They have demonstrated beyond doubt that most leucorrhées have their origin in the cervix and not in the body of the uterus and that local treatment of or operations which extirpate the cervical mucosa are far superior to scraping off the outer two-thirds of the glands. In the last instance, uterine hemorrhage, it still has a large field of usefulness, although in the case of incomplete abortions the use of pituitrin and Murphy's axiom, "wait," has rendered it less frequently necessary.

My preliminary treatment consists of an enema and a douche given, if time permits, both the night before and shortly before going to the operating room; the patient is allowed regular diet the day previous but has no food after retiring, although fluids are allowed, that is water, tea or bouillon, up to four hours before the operation. One hour before, the patient always receives one-fourth morphine and one-hundredth of atropin. She will go to sleep more quietly and take less anesthetic and have less discomfort afterward. Patients who have a lung lesion or

to whom for any reason you do not care to give an anesthetic, a second hypo of morphine one-half hour after with hyoscine one-hundredth grain, renders the patient so quiescent that the operation may be completed without an anesthetic or with only the administration of a few drops of chloroform as the cervix is being dilated.

Anesthetic may be of choice. As the anesthesia is begun, the patient is given one ampule of surgical pituitrin. This renders the uterine walls so firm that the danger of pushing the curette through the wall is materially lessened. I think all who are doing much gynecological work have had that very disturbing sensation which develops when you pass the curette in and in and in, with no resistance and realize you are in the abdominal cavity, and this may occur even with a careful operator, for the uterine wall may be so soft and flabby that it cannot be readily identified. The free hand placed above the symphysis and pressing down into the pelvis behind what we take to be the uterus makes its presence more positive. With the pituitrin this procedure is not as essential, although it may be used to advantage when you have retained material following a late miscarriage. Another virtue of pituitrin is the control of hemorrhage. The uterine muscle fibres, by contracting upon the blood vessels of the uterus, lessen their calibre and consequently lessen the flow of blood. This being done at the beginning of anesthesia, renders the operation often very nearly bloodless.

I am preparing the patient on the table by using a 5 per cent solution picric acid in 70 per cent alcohol and paying especial attention to swabbing the inside of cervix as well as vagina.

I believe in the use of the tenaculum very little downward traction should be made. It should be used simply to hold the uterus in position. Endeavoring to pull the cervix to the outlet of the vagina puts too much strain on the ligaments and is the first step in the production of a retroversion.

Dilation if necessary should be done gently but firmly, the more time devoted to dilating a rigid cervix the easier the curetttement will be. Sudden forcible dilation will not infrequently give you a laceration. In case of incomplete abortion or evacuating a pregnant uterus, matters will be expedited if the placental forceps are used first in removing all loose material. Curetttement is performed by the use of an irrigating curette using a hot $\frac{1}{2}$ per cent lysol sol. container at a

moderate elevation. This washes out the shreds of endometrium as fast as they are removed from the wall. If the shreds are large they may tend to clog the opening, but that is easily kept patent if a pair of artery clamps are passed in beside the handle of the curette to pull the clogging material out. The curette should be applied gently and preferably in consecutive strokes over the whole uterine surface. By changing the angle of the curette head the fundus of the uterus can be curetted by strokes from right to left or vice versa. As I mentioned before, care must be exercised, for with surprising ease, in a flabby-walled uterus a curette may be passed right through. Fortunately if the uterus is nonseptic the error causes no great disturbance, although if you are using the irrigating curette as I do a considerable amount of fluid may find entrance into the abdomen. I recall one instance in which I ran in one-half a pint or so before I realized what had taken place. Aside from considerable abdominal pain the next two days, nothing untoward occurred and the patient has since had a child with little disturbance while carrying it. This error has been committed by the best men in the country. I well recall during my internship days of thinking and discussing with other interns the carelessness of the attending gynecologist, a very clever operator, in committing such an error. But not long thereafter I "lost my curette" and I can assure you since then charity has been my middle name.

In cases in which there has been much leucorrhœa, if I do not do a repair, I frequently swab out the cervix only, with a mixture of phenol and iodide aa. You will find it rarely necessary to pack the uterus if you thoroughly remove all mucosa and foreign material. However, if you do pack it, the removal of the packing should be accomplished by the fingers of one hand in the vagina pressed firmly against the cervix holding it in its posterior position and drawing out the packing with the other. If you do not thus hold the cervix back you are quite apt to drag the uterus down so that it will fall into the position of retroversion.

The last thing to be done before removing the patient from the table is to carefully replace the uterus. I well remember the positive statement of my professor, "Always replace the uterus," and I always did it but I suppose in a more or less careless way; but his aphorism was most forcibly brought to my attention again when one

of my patients returned to me a month or more after a curettage complaining of great discomfort over the sacrum. Examination revealed the uterus retroverted. Fortunately I was able to replace it without an anesthetic and immediately relieved her of pain. A uterus which has been retroverted for years may not retain its position if replaced, even with the use of a pessary, but at least we should see to it that an operation for one condition does not produce another condition which is extremely disturbing. This carelessness, unfortunately, is not rare.

In conclusion I will mention these points in the technique which have increased my satisfaction in my own work:

1. The early use of pituitrin to control hemorrhage and render the uterus more firm.
 2. Increasing care in use of the curette.
 3. Care in removal of packing if any is used.
 4. Careful reposition of the uterus, before the patient leaves the table, and this last is by far the most important.
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REGIONAL ANESTHESIA IN SURGERY OF THE KIDNEYS AND PROSTATE

By WINFIELD SCOTT PUGH, M. D.

From the Urological Department (James Buchanan Brady Foundation) of the New York Hospital.

In no field has the value of regional anesthesia been quite so thoroughly demonstrated as in that of the urinary system. Many of these patients when they are first referred to us are of the class known as poor surgical risks and we constantly find them with a low phthalein output and a high blood urea. The presence of chronic urinary lesions is conducive to the development of a chronic myocarditis and the cardio-renal-arterial syndrome is a frequent occurrence. The development of the preliminary and post-operative treatment in this class of patients, notable by Lowsley, is largely responsible for the decrease in the mortality rate in urological surgery. Of scarcely less importance, however, is the question of anesthesia. Any general anesthetic, even nitrous oxide and oxygen, produces a certain amount of shock and has a repressive tendency on the functional activity of the kidney which must be reduced to a minimum in this class of cases.

In such a brief paper I shall not attempt to discuss any preliminary technique but will limit myself to the anesthetic methods we have found best suited for use in renal and prostatic surgery.

SUPRAPUBIC PROSTATECTOMY.

Many American surgeons have adopted the following technique in conjunction with their prostatectomy by the superpubic route. An area in the midline of the abdomen extending about six inches in length between the symphysis pubis and the umbilicus is infiltrated with one per cent novocaine. The infiltration as a rule is first made into the skin and subcutaneous tissues, after which they are incised. Each corresponding abdominal layer is treated in a like manner until we reach the prevesical fascia. The latter is then infiltrated, retracted and the bladder exposed. It is wise to also infiltrate a small area on the bladder wall before opening that viscus. The second stage of the prostatectomy is usually conducted under nitrous oxide anesthesia.

European surgeons differ considerably in their technique, but the majority practice the methods as used in the clinics of Hackenbruch of Tena and Jellyes of Budapest. Hachenbruch, after an extensive experience in local anesthesia, is most favorably inclined to the following procedure: Four preliminary subcuticular wheels are made at the following points, viz: First, at about an inch below the lower edge of the umbilicus in the median line; second, in the median line just above the symphysis pubis, while the third and fourth are made at the outer border of each rectus abdominalis muscle, but midway between the first and second wheels. This forms a diamond-shaped area and from the four points of the figure superficial and deep injections of one per cent novocaine are made. From the upper and lower points the injections are made toward the center of area and toward the lateral points. From the lateral points the injections are made toward the center and the upper and lower poles. A needle about eight centimeters long is used and in this country the local anesthesia apparatus of Dunn or of Babcock are well adapted for this technique.

After a few minutes' pause the usual incision is made down to the prevesical fascia, which is in turn infiltrated and retracted. If any pain appears at all it will be at this point, so we must exercise care at this stage. The bladder is now exposed, infiltrated at the point of incision and opened. Europeans in their prostatic surgery always use a preliminary catheter drainage and

find almost all of their patients tolerate it without annoyance. They are therefore enabled to do the prostatectomy in one stage.

When the bladder is exposed the patient is placed in a modified Trendelenburg position and the prostate appears in view. The prostate and the prostatic capsule anterior, posterior and laterally is injected with novocaine and the gland then enucleated. This method is usually entirely painless until the gland-removal stage and this is always apparently a little uncomfortable even to the stolid European.

Professor Jellyes of Budapest uses quite a different technique. With the patient in a modified knee-chest position he first makes an injection into the caudal canal at the tip of the sacrum. About thirty cubic centimeters of 1 per cent novocaine is very slowly injected in the canal. After a few moments rest the patient is turned over on his back and the anterior infiltrations are started. Some of the workers in this large clinic insist that most suprapubic cystotomies can be done with the sacral anesthesia alone. This point I doubt very much and it is notable that none of those who feel confident on this point ever operate without an anterior infiltration. On the anterior abdominal wall Jellyes makes nine small wheels as follows: One just above the symphysis pubis, one just below the umbilicus and one midway between these two. At points just opposite to these and corresponding to the outer border of each rectus abdominalis muscle, other wheels are made. Thus we have three wheels in the middle line and three at the outer border of each rectus muscle. This is also a one-stage operation, as preliminary continuous catheterization takes the place of the usual first-stage cystotomy. It is a remarkable fact that all these patients stand continuous catheterization without apparently any untoward effects.

From each one of the wheels noted superficial and deep injections are made into the skin and muscular structures. One per cent novocaine is the anesthetic solution of choice. From the upper wheels injections are made downward and toward the midline of the abdomen, while from the middle row the solution is directed upward and downward. In our injections from the lower wheels, we direct our needle upwards, toward the center and also toward the lateral borders. This procedure gives a very thorough infiltration and quite an adequate area of anesthesia and there is no annoyance to the patient after the pre-

liminary needle punctures. The bladder is now distended, the prevesical tissues are slightly infiltrated before retraction. When the bladder appears in view it is slightly infiltrated along the line of proposed incision and then opened; the prostate being removed under direct vision.

In our own operative work we seldom perform prostatectomy by the suprapubic route except in those prostates which protrude well up into the bladder and are only satisfactorily reached by this method. This recalls to our mind the remarks of Watson, who in 1888 said: "The typical cases for suprapubic prostatectomy are the enormous prostates or those enlargements of considerable size which extend well up into the pelvis and where the lobes project up into the bladder. They are liable to be out of reach of the finger working through the perineum and the logical route of attack is from above."

In many of our prostatics we, however, find a preliminary suprapubic drainage the most satisfactory procedure even when we intend removing the gland itself later by the perineal method. The question of drainage in prostatectomy is an important one and we believe this method gives us the correct answer. In suprapubic cystotomy for drainage we find that the anterior triangular injection as used by Rubritius to be quite satisfactory and causes the patient a minimum of disturbance. We have had no success, however, with the removal of the prostate under prostatic infiltration anesthesia.

PERINEAL PROSTATECTOMY

Our choice of prostatectomy as previously noted is usually by the perineal route, as the majority of our cases seem to be of the low-lying type of gland. We have felt for a long time that the ideal prostatectomy would be performed under regional anesthesia. I do not believe, however, that a satisfactory prostatectomy can be performed with sacral anesthesia alone, but combined with parasacral after the technique of Lowsley,¹ it leaves nothing to be desired. It always being advisable for one to look up his anatomy before trying a new technique, I shall not enter into a discussion of that feature.

Our patient lies on his chest and abdomen, his head to one side and a small pillow passed beneath his lower abdomen. We then look for the

¹Lowsley, O. S.: Major urological surgery under sacral and parasacral anesthesia. *Surgery, Gynecology and Obstetrics*. V. 37, Nov., 1923, pp. 686-692.

sacral hiatus and as a rule this is not difficult to find, the sacral cornua being good landmarks. We slowly introduce our Labat regional needle at the hiatus into the caudal canal. It is then advisable to wait a moment to see if there is any spinal fluid or blood coming from our needle. If blood or spinal fluid appear it is wise to withdraw the needle and go on with the parasacral technique, on its completion returning to the sacral. However, if blood or spinal fluid appear in any quantity, it may be advisable to postpone the operation. Before we begin to inject the caudal canal, it is always advisable to have someone watching the pulse and blood pressure. It is our custom then to inject very slowly thirty c.c. of a 1 per cent solution of novocaine. At the same time we must watch the tissues over the sacrum just above the corna for signs of infiltration; if this occurs we are not in the canal. Our observations have shown that if the pulse or blood pressure is going to be effected by the anesthesia it will occur at the time of the caudal injection. If stimulation is necessary as a result of falling blood pressure caffeine citrate gr. $\frac{1}{2}$ hypodermically seems to be the best drug for the purpose. Upon completion of the caudal injection we proceed to the parasacral injections. The location of the sacral foramen posteriorly are very easy to find, even in well-developed patients, as a distinct depression can usually be detected about 2 cm. from the median line. There are a few cases in which the area over the foramen of the sacrum appears to be absolutely flat and these often cause a little more trouble.

We usually inject the three upper sacral foramen on each side. It is rarely necessary to attempt blocking the lower foramen as the nerves from this area do not seem to enter our field. The foramen is located with the index finger and our needle is then passed over the end of the finger directed, forwarded and inward toward the middle line. When the needle strikes bone we have gone far enough and then inject about one or two c.c. of the 1 per cent novocaine about the foramen. The same procedure is repeated until all of the six foramen and their nerves are blocked. There are two points here that one must be cautious about, we must not get into the vessels, and one is usually found issuing from each sacral foramen. One must also be most careful not to puncture the rectum and I must call your attention to the fact that the bladder has also been punctured in this procedure. It seems almost incredible, but the needle in the

bladder puncture case seemed to pass around the rectum and when the operator withdrew the plunger of his syringe was rather startled to find his barrel filled with urine. Fortunately no damage resulted, but it will serve to demonstrate a possible accident. It is our routine to begin the operation twenty minutes from the time we first started the caudal injection. This gives the anesthetic effect of the drug an opportunity to develop to its fullest extent. As in all regional procedures even with a mildly toxic drug, evidences of toxicity appear, but are as a rule mild and fleeting. The Brady Foundation has been for some time past working on a new local anesthetic that is said to be one-twentieth as toxic as cocaine and possessing antiseptic qualities in addition. This drug, which has been given a temporary name of anetine, seems to promise well.

Chute² of Boston has had excellent results from the use of spinal anesthesia in his urological surgery, particularly in the operation of prostatectomy. While this experienced surgeon has had the splendid results he reports, many of equal experience have been just as unsuccessful as he has been successful. There is no denying the fact that there is more to disturb one's peace of mind in the possible sequelæ of spinal anesthesia than there is in the regional method. It has been our fortune or misfortune—I do not know just which to call it—to have seen grave results follow the use of the spinal technique. Among these cases were two patients who developed a paraplegia, one of which lasted six months; the other case died in about six weeks of pneumonia. I feel reasonably sure that the pneumonia was secondary to the paraplegia, as most patients suffering with lesions of the nervous system, usually die of a pulmonary consolidation.

CYSTOSCOPY.

For the performance of cystoscopy in badly diseased bladders as in tuberculosis; fulguration of large tumors or such other intravesical techniques, as litholapaxy, nothing equals sacral anesthesia. Sacral anesthesia can be used either in the hospital or in the office as recommended by Scholl.

OPERATIONS ON THE KIDNEYS.

In all of our renal operations and in those involving the upper third of the ureter we have found paravertebral anesthesia best suited for this purpose. In looking over the history of

²Chute, A.: Spinal anesthesia in urological surgery. Address New York Academy of Medicine, Nov. 16, 1923.

anesthesia we find that paravertebral anesthesia was first worked out by Sellheim³ in 1906, as part of extensive researches in abdominal surgery. Sellheim's original idea apparently was the development of a regional technique to be used in place of general anesthesia in abdominal operations. His early work was not very successful. Paravertebral anesthesia is much better adapted to operations which require a one-sided nerve blocking, than in those requiring a bilateral technique. In 1911, Arthur Lawen⁴ of the University Clinic at Leipsic did the first nephrotomy under this method of anesthesia. This we may count as the real introduction of the method in urological surgery. Shortly after its demonstration by Lawen it was taken up by Finsterer of Vienna, and recognized as a valuable procedure. From Vienna the method then spread over Europe, where it is now extensively used, particularly by Braun.⁵ Ziegel, Kappis⁶ and in the large urological clinic of Jellyes.⁷ In the latter over 1,800 operations have been carried out with paravertebral anesthesia alone. Hartel⁸ tells us that this technique requires an exact knowledge of the skeletal structures in order to attain a successful anesthesia. After some anatomical studies made in connection with this method, we are thoroughly in accord with that eminent surgeon.

Among European surgeons, and particularly Jellyes, it is not customary to use any preliminary morphia or atropine, as they think the patients are better without it. Our patients, however, are, to say the least, not quite so stolid as the European and require much more preparation than their brothers across the sea. It is our custom to use about 1/6 gr. morphia and 1/100 g. atropine about an hour before the operation, as it has seemed to us our patients respond better to the anesthetic by so doing.

It is quite important that the patient be disturbed as little as possible and should be taken to the anesthetic room lying flat on his back, never

³Sellheim, H.: Die Herabsetzung der Empfindlichkeit der Bauchhöhlen, und das Peritoneum durch perineurale injection anesthesiender losungen an die stamme der Nerven intercostales des subcostalis des iliohypogastricus, und des ilioinguinalis. Verhandl. d. Deutsche Gesellschaft & Gynak, 1905, pp. 176-179.

⁴Lawen, A.: Paravertebral Leitungs anesthesie. Muenchener Med. Woch., LXVIII, June 27, 1911, pp. 1390-1391.

⁵Braun, H.: Local anesthesia translated by Shields. Lea & Febiger, Philadelphia, 1914, pp. 320-321.

⁶Kappis, M.: Der Gegenwartige-stand der Ortlicher Betaubung bei operation an der Harnorgan. Zeit. f. Urol. Chir., Vol. X, pp. 114-118. July, 1922.

⁷Jellyes, G.: Personal communications. 1923.

⁸Hartel, F.: Die Lokal anesthesie. Neue Deutsche Chirurgie. Band 21, pp. 259-266. Stuttgart, F. Enke. 1916.

allowed to walk. It may be well to explain to the patient the advantages which he will derive from a painless operation and a minimum of post-operative discomfort. He should also be apprised of the fact that he will feel a few needle punctures, and as he will then expect it, will not be alarmed when they occur.

In our paravertebral anesthesia it is essential that we block the eighth to the twelfth thoracic and the first lumbar nerves. These nerves supply the anterior, lateral and posterior surfaces of the abdominal wall, including all the superficial and deep layers of skin and muscle. It is true that the lower lumbar nerves do at times send branches to this area, but they are fully controlled by what is known as the quadratus block and which I will describe below. It is important to remember in connection with paravertebral anesthesia that at the points where we begin our block of the thoracic nerves, we are only separated from the pleura by the internal intercostal fascia. The pleura is also a little closer to the surface on the left side than it is on the right. When we are ready to start the nerve blocking it is best to have the patient sitting on the edge of the table, his feet resting on chairs that just allow the thighs to form a right angle with the abdomen. The body should be bent slightly forward, the head bowed a little and a trusty attendant should stand in front of the patient to provide any necessary support.

As an anesthetic we use 1 per cent novocaine, with the Labat regional anesthesia syringe and needles, which are quite ideal for this purpose. A series of wheels are first made in the intercostal spaces about two fingers' breadth from the spinous process, beginning at the eighth, which is usually opposite or a little below the angle of the scapula. These intercostal wheels are continued down to the twelfth dorsal nerve, which is however subcostal.

After these preliminary wheels are made, we go back to the first and pass our needle directly into the wheel at right angles to the rib, injecting a little novocaine until we reach the lower rib border. We then withdraw the needle slightly and turn it at an angle of 40 to 45°, and direct it fairly close to the lower border to the rib, press the needle in, injecting slowly as we go until we reach the transverse process. About 5 c.c. of novocaine is used in each one of these injections which are then continued in the same manner until the twelfth dorsal nerve is blocked. It is true there is some danger of puncturing the plura,

but in the vast majority of cases we strike the rib first. When these intercostal injections are completed a wheel is made just above the anterior and posterior superior spines of the ilium, and one above each of these, the first on a line with the anterior border of the last rib and the other about two or two and a half centimeters from the spine of the first lumbar vertebrie. The area between these four points, being well over the quadratus lumborum muscle, is usually called the quadratus block. From these latter four wheels superficial and deep injections are made, the upper being injected directly downward and toward the center of the area, while the lower are injected upward and toward the center. The needles for this purpose should be about 8 cm. long.

The injections made into the area just noted very effectually block the ilio-hypogastric and the ilio-inguinal, the main branches of the first lumbar nerve. Any other branches of the lumbar nerves which may appear are well taken care of in this block. The anesthesia is only used on the side which we intend to operate on and as a rule we seldom use over 100 c.c. of the blocking solution.

It is usually advisable to wait a few minutes before starting the operation; this applies equally well, however, to all local and regional techniques. The oblique incision beginning at the edge of erector spinal and last rib, then continued in the direction of the anterior superior spine of the ilium is best adapted for use in connection

with this form of anesthesia. I have seen this technique used many times in Europe and we have done a series of nephrectomies for tumors, nephrotomies for stone, and nephropexy, as well as ureterotomy with its aid. It is remarkable how little post-operative shock and pain is noted, as the anesthetic effect usually continues for a few hours after operation. It takes a while to familiarize oneself with paravertebral anesthesia, but it undoubtedly is the method of the future for use in renal operations.

Several American surgeons, notably Hertzler,⁹ have performed nephrotomy for stone by the use of local anesthesia, each layer of the abdominal wall being anesthetized. We have also used this method but find it a little trying and one is much more restricted than by the use of paravertebral anesthesia.

⁹Hertzler, H. E.: Bilateral nephrolithiasis operation under local anesthesia. *Surgical Clinics of North America*. Vol. 3, number 6, Dec., 1923, pp. 1513-1518.

SUMMARY

1. Regional anesthesia is indicated in all operations on the kidney, bladder and prostate.
2. It reduces shock as well as urinary and cardiac disturbances to a minimum.
3. With a little practice all of the techniques are readily acquired.
4. Suprapubic operations may be done by one of several techniques.
5. Perineal prostatectomy is best accomplished by a combined sacral and parasacral anesthesia.
6. In renal operations, paravertebral anesthesia is the method of choice.
7. Difficult cystoscopies and intravesical techniques may be readily done under sacral anesthesia.

JAMES VOORHEES FREEMAN, M. D.

1876—1924

*W*ITH the passing of James Voorhees Freeman, Duval county and Florida suffer an inestimable loss. He was most deserving of the love and admiration accorded him by the profession and public. His life was one of exemplary attainments, both as a physician and citizen. At a memorial meeting of the Duval County Medical Society, October 6th, the following tribute to his memory was made by James D. Love:

"I have been asked by our President to speak a few words regarding the life and accomplishments of one who for years has been one of our most distinguished members and who but recently presided over this society as its president.

"I am doing so with full cognizance of my inability to do justice to his character and attainment. I have enjoyed his friendship and acquaintance longer than most of you, and known something of his ambitions, his life, his love, his struggles and achievements, and we who know him best need no proof of the purity of his purposes and the untarnished quality of his aims.

"I have known him as a young man inspired by hope and high resolve and filled with dreams of great accomplishments, and I believed in the purity of his motives. I have watched his professional growth and have known him in his full maturity when his work had been crowned with success and popular love and praise had been his meed. I have known him as he was but a few days ago, loyal to his friends, loyal to his profession, happy in the love of his family and blessed with the confidence of friends and patients."

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TREATMENT OF TRYPARASOMIASIS

The Rockefeller Institute for Medical Research has announced the release of the drug known as Tryparsamide for use in the treatment of human and animal trypanosomiasis (African sleeping sickness and *mal de caderas*) and selected cases of syphilis of the central nervous system. This action is based on results reported from clinical investigations which have been in progress for several years. The drug will be manufactured by the Powers-Weightman-Rosen Garten Co. of Philadelphia, and will become available through the regular trade channels about January 1, 1925. In releasing the drug for the benefit of the public, the Rockefeller Institute desires it to be known that the Institute does not share in any way in profits that may be derived from the sale of the drug and that, with the cordial cooperation of the manufacturers, provision has been made for the maintenance of a schedule of prices on as low a basis as possible.

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AN INTERESTING GROUP

Adrenalin, the original representative of the blood-pressure-raising or pressor principle of the suprarenal glands, introduced in 1901 by Parke, Davis & Co., has now an interesting group of offshoots—preparations which depend in whole or in part for their value as medicinal agents upon the adrenalin they contain.

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ORIGINAL ARTICLES

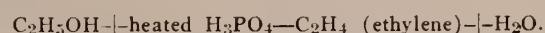
ETHYLENE-OXYGEN ANESTHESIA*

GASTON DAY, M. D.,
Jacksonville, Florida.

When the Hull Botanical Laboratory, fifteen years ago, determined that the toxicity of illuminating gas for flowering plants was due not so much to its carbon monoxide content as to the ethylene which forms about four per cent of the gas, this fact naturally suggested the study of its toxicity for animals. Preliminary experiments were made by A. B. Luckhardt and J. B. Carter, of Chicago, with frogs, white mice and one dog. In the concentrations used (diluted with oxygen) it was found that ethylene was not only relatively nontoxic but also seemed to possess both analgesic and anesthetic properties. Further experiments were made with frogs, white mice, white rats, guinea pigs, rabbits, cats and dogs, using different concentrations of ethylene. Control experiments were made at the same time with other gases, namely, hydrogen, nitrogen and nitrous oxid. The observers found that hydrogen and nitrogen did not anesthetise at all and that ethylene not only anesthetised in about half the time required for nitrous oxid, but that it anesthetised in lower percentage mixtures.

Following these preliminary investigations, Luckhardt and Carter tried the gas on each other and on volunteers for the work until they had anesthetised more or less deeply twelve subjects, finding that surgical anesthesia could be rapidly induced without any sense of asphyxia, but rather with a sense of wellbeing, the anesthesia being characterized by good color, muscular relaxation, slow pulse and respiration and rapid recovery on withdrawing the gas mixture. After these experiments on normal, healthy individuals, the administration of ethylene was extended to patients requiring surgical intervention, first for the more simple procedures, and on being found satisfactory, gradually in the more prolonged and major operations, until at the present time it is used extensively in various hospitals by many surgeons and anesthetists.

Ethylene is an unsaturated hydrocarbon, prepared by allowing very small amounts of ethyl alcohol to interact slowly with very hot sulphuric or orthophosphoric acid. As a result of this interaction ethyl alcohol loses one molecule of water:



Chemically then ethylene may be considered a dehydrated ethyl alcohol. Ethylene is an inflammable gas and forms with air or oxygen in certain concentrations an explosive mixture. The gas may now be bought compressed in cylinders ready for use in the same way that nitrous oxid and oxygen are supplied.

At the Duval County Hospital, in Jacksonville, we have, so far, used ethylene-oxygen anesthesia in some sixty cases with great satisfaction. It is administered in practically the same manner as nitrous oxid anesthesia. Any gas machine may be used for ethylene, care being taken not to attach the ethylene cylinders to the oxygen side of the machine. The administration is begun with about ten per cent oxygen from the beginning, or possibly a few breaths first of the pure gas in the more robust subjects. After surgical anesthesia has been established the oxygen can be increased to twenty per cent or more without disturbing the anesthetic level, which, of course, is a much higher percentage of oxygen than can be used routinely with nitrous oxid—the average with nitrous oxid being about five to ten per cent.

In this preliminary survey of fifty cases, it is our experience that this anesthetic offers the following advantages:

1. *Ease of induction and rapidity of recovery.* Very few patients require any restraint, the induction being characterized by lack of movement or excitement, quiet pulse and respiration. It is found that patients are ready for operation in a surprisingly short time, many of the patients for laparotomy being ready for incision in seven to eight minutes. As with other anesthetic agents, however, it will be found that anesthesia and relaxation are better if the ethylene-oxygen is allowed at least ten minutes to secure the desired level of surgical narcosis. Minor surgical procedures may be started much sooner, e. g., a tooth

*Read before the Fifty-first Annual Meeting of the Florida Medical Association, held at Orlando, May 13, 14, 1924.

may be extracted or an abscess opened after about two minutes of anesthesia.

If the induction has been surprisingly quick, the recovery usually is equally prompt. The recovery from ethylene is very slightly slower than from nitrous oxid, this being more noticeable in those patients who have had a preliminary hypodermic. But in no patient was this recovery period longer than five minutes, even in those under the anesthetic for two hours or more. The average time of recovery was about three minutes.

2. *Relaxation without cyanosis.* At no time are the patients cyanotic under this gas if the airway is kept clear, and this is easily done, for the jaw is very relaxed and the chin can readily be held forward or an artificial airway introduced. You will find that the mucus membranes, skin and viscera are a healthy pink color due to the high percentage of oxygen which can be given with ethylene. This is in strong contrast to nitrous oxid anesthesia, in the administration of which cyanosis is often present, if the gas is given in a concentration sufficient to secure the desired plane of surgical narcosis.

3. *The maintenance of this anesthesia also shows quiet respiration and a pulse of normal rate or slightly slowed.* The whole picture resembles a chloroform narcosis with its quiet respiration and slow full pulse. The patient's skin remains warm and dry; it is usually unnecessary to change the patient's garments on returning to bed. The only patients, in the present series, showing rapid pulse and respiration and sweating were those septic cases which came to the table with elevation of temperature, pulse and respiration. This type of patient always sweats and runs a rapid pulse and has a rapid shallow respiration under any anesthetic.

4. *Absence of respiratory irritation.* It has been our experience that ethylene causes no irritation of the respiratory tract, consequently no mucus is secreted. This is a distinct advantage in all patients, but especially in those with disease of the respiratory tract contraindicating ether. So far we have noted an absence of kidney irritation, ethylene-oxygen having been used in nephritis and diabetics without any exacerbation of the condition.

5. *The analgesia seems both more pronounced and prolonged than with nitrous oxid.* It is possible to begin minor operations in about two minutes; or after induction to remove the mask and pull one or more teeth, even though the patient is

beginning to regain consciousness. This increased analgesia is one of the reasons for the success of ethylene, for it permits more manipulation with less muscular reaction.

6. *One of the most important advantages of ethylene anesthesia seems to be the slight effect on blood pressure.* In this series there were not many blood pressure records kept, because both hands and attention seemed to be fully occupied with the handling of a new method. But all those who have kept such records seem to be in accord in reporting that there is a small initial drop in blood pressure and pulse rate, after which both fluctuate very little, even with fairly rough handling of the tissues. It is hardly probable that any anesthetic, however, will protect from traumatic shock in the presence of manipulations that are rough or unduly prolonged. Dr. E. I. McKesson, of Toledo, Ohio, who is probably the best known authority on blood pressure guides during anesthesia, has recently made the statement that after using ethylene for nine months he has never seen a real case of shock during its use.

7. *Premedication.* With this anesthetic patients may be handled without premedication. Better relaxation is more certain for laparotomy, however, with the use of morphin, morphin-atropin or morphin-scopolomin, as the case may be. This is best given one hour before operation.

8. *Lessened postoperative vomiting.* Figures on vomiting following anesthesia are hard to obtain, various writers often giving widely different percentages; this is possibly from the fact that the cause of post-anesthetic vomiting is often difficult to determine. Without doubt many patients vomit after anesthesia from the effects of the anesthetic itself, but some vomit also from morphin susceptibility and some from the handling of reactive viscera. In the present series, there have been ten that vomited. This does not refer to those patients who have retched and perhaps spit up a small amount of fluid immediately on withdrawal of the gas mixture. It refers rather to those in whom some nausea has persisted for a number of hours and who have vomited two or three times or oftener. This would give us a percentage of 16.7 who have vomited. There have been three of these patients who have vomited like the average ether patient. Sixty cases is too small a number from which to draw hard and fast conclusions, but when we remember that about seventy-five per cent of ether patients vomit, it is certain that ethylene

offers a marked reduction not only in the number of cases, but also in the degree of nausea.

DISADVANTAGES

1. *Odor.* Ethylene has a peculiar odor that is most often likened to molasses, a combination of fermenting sorghum and wet matches. Objections to this odor seem most often to come from the operating room personnel rather than from the patient. Our patients have seldom objected to the odor, in fact some of those, who previously have been anesthetised with nitrous oxid, say they prefer "the new gas because they went to sleep so much quicker." The odor is a minor disadvantage.

2. *With ethylene, as with any gas anesthetic, there is a much narrower margin of anesthesia than with ether.* This might be classed as a disadvantage to the surgeon and anesthetist, but certainly from the patient's viewpoint it is an advantage. This narrow margin of anesthesia necessitates an administrator trained in gas anesthesia, for your patient may very quickly be too light or too deep. Changes may occur so quickly that good anesthesia and the safety of the patient demand "eternal vigilance."

3. *The real disadvantage of ethylene lies in the fact that it is an inflammable gas and that in certain combinations of air or oxygen it is highly explosive.* Therefore, it must not be used in the presence of a cautery or free flame. Dr. W. Easson Brown, of Toronto, a pioneer in the use of this gas, shows that ethylene can be safely compressed into cylinders for handling and shipment. He has proven that pure ethylene without oxygen or air will not explode in the presence of an electric spark, but the real danger arises when oxygen is added for anesthesia. In the usual percentages in which ethylene-oxygen is used for anesthesia, up to twenty-five to thirty per cent oxygen, the mixture is not an explosive one. The ethylene must be mixed with thirty-five to forty per cent oxygen before it will explode in the presence of an electric spark, according to Dr. Brown. The higher the percentage of oxygen, the more explosive the mixture, the maximum violence being reached with about three parts of oxygen and one of ethylene.

Another danger that must be considered is the ethylene that escapes from the spill valve of the mask into the room and becomes explosive when the ethylene content of the air reaches five per cent. Supposing that the normal ventilation of a patient is 8000 cc. a minute and the average

operating room contains 2700 cu. ft. (15x15x12), it would require at least six hours' continuous anesthesia without the slightest room ventilation to bring the ethylene content of the atmosphere up to five per cent, which is the minimum explosive mixture. In view of the fact that two fatal and some less distressing explosions have already occurred, it behooves us at present to exercise every precaution and under no circumstances use ethylene-oxygen anesthesia in the presence of the cautery, free flame or electric spark.

ILLUSTRATIVE CASE REPORTS

The present series has included a variety of cases. It has been used for both white and colored. The ages have ranged from four to seventy years. The ethylene-oxygen was first used for the induction of ether anesthesia, and then for cystotomy, external urethrotomy, amputations, pelvic laparotomy (salpingectomy, hysterectomy), appendectomy, cesarian section and gastro-enterostomy. In practically all cases so far ether relaxation has been attained or very closely approached. With a few exceptions our patients have had premedication, usually morphin gr. 1/6, atrophan gr. 1/150; a few have had morphin and scopolomin, but the scopolomin seems to be unnecessary, as morphin in moderate doses is all that is required. From the cases studied the following have been selected as illustrations:

Case 1. I. C., colored female, age 45, admitted to the County Hospital March 21, 1924, with a fibroid tumor in left broad ligament. March 24, 1924, under ethylene-oxygen anesthesia the abdomen was opened, the tumor removed and a supravaginal hysterectomy and double salpingo-oophorectomy done. The operative time was one hour. The anesthesia was good throughout, with relaxation at all times. The patient's postoperative condition was good, being fully awake from the anesthetic in three minutes, with the skin warm and dry, vomited a small amount of clear fluid on withdrawal of the anesthetic; no further vomiting. Convalescence uneventful.

Case 2. C. P., colored female, age 22 years, admitted to the County Hospital March 21, 1924. Diagnosis: Double pus tubes and cystic disease of both ovaries. March 27, 1924, under ethylene-oxygen anesthesia, a double salpingo-oophorectomy was done, leaving a portion of left ovary. The anesthesia was good through the operation, the relaxation being good at all times. Three

minutes after withdrawing the anesthetic, the patient was awake and mentally clear, the skin warm and dry, no nausea or vomiting.

Case 3. L. J., colored female, age 33 years, admitted County Hospital March 8, 1924. Diagnosis: Fibroid uterus, double pus tubes. March 18, 1924, under ethylene-oxygen, supravaginal hysterectomy, removal of both tubes and a cystic right ovary and appendectomy were done. Anesthesia and relaxation were good at all times. Postoperative condition was good, patient being awake in three minutes, skin warm and dry and vomited a small amount of clear fluid. This patient complained of slight nausea during the remainder of the day and vomited a small amount of clear fluid three times.

Case 4. M. W., white female, age 35 years, admitted County Hospital January 22, 1924. Diagnosis: Cholecystitis and cholangitis. January 30, 1924, under ethylene-oxygen anesthesia, a Finney pyloroplasty and drainage of the gall bladder were done. The operative time was two hours and ten minutes. Although the operation was in the upper abdomen, the relaxation was good throughout. Postoperative condition was good, the patient reacting from the anesthetic in five minutes, nails and lips pink, somewhat drowsy. There was no nausea or vomiting.

Case 5. W. H., white boy, age 16 years, admitted County Hospital February 9, 1924. Diagnosis: Glaucoma left eye, with degeneration of the globe and corneal ulcer. On admission the patient had a bronchitis and was running moderate temperature. Ten days after admission, under ethylene-oxygen anesthesia, the eye was removed. Anesthesia was entirely satisfactory; skin remained warm, dry and pink, pulse and respiration slow. On withdrawal of the gas mixture, the patient was awake and mentally clear in two minutes. There was no nausea or vomiting.

Case 6. R. D., colored male, age 19 years, admitted March 25, 1924. Diagnosis: Double inguinal adenitis (the glands not broken down). March 27, 1924, under ethylene-oxygen, there was done a double inguinal adenectomy and circumcision. The anesthesia was exceptionally good, patient being quiet and relaxed at all times, with slow, quiet respiration and normal pulse rate. Postoperatively, patient awake and mentally clear in two minutes, no nausea or vomiting.

Case 7. B. W., colored male, age 40 years, admitted March 21, 1924. Diagnosis: Periurethral abscess, urinary fistula and strictures. March 24, 1924, under ethylene-oxygen anes-

thesia, external urethrotomy was done. Anesthesia was entirely satisfactory throughout. Postoperatively, patient was awake in three minutes, skin warm and dry, no nausea or vomiting.

Case 8. W. K., colored male, age 46 years, admitted to the County Hospital. Diagnosis: Periurethral abscess. April 11, 1924, under ethylene-oxygen, a periurethral and ischiorectal abscess were opened and drained. Anesthesia was entirely satisfactory. Patient was quiet and relaxed at all times. Postoperatively, awake in five minutes, skin warm and dry, no nausea or vomiting.

Case 9. R. S., colored female, age 45 years, admitted to County Hospital October 19, 1923. Diagnosis: Pedunculated fibroids of the uterus. The tumor mass filled the entire lower abdomen, extending one inch above the umbilicus. In addition, there was a marked enlargement of the heart to the left, with a loud systolic murmur which was transmitted to the axilla and to the vessels of the neck. The urine on repeated examination showed albumen. The hemoglobin was only 20 per cent. Due to these findings, the patient was kept under treatment until the hemoglobin had been brought up to 55 per cent. February 20, 1924, under ethylene-oxygen anesthesia, operation revealed a fibroid of the uterus and a very large left ovarian cyst. The cyst was removed, and hysterectomy done, with removal of both tubes and ovaries. Operative time, one hour. Anesthesia was satisfactory throughout, relaxation good; the latter was very necessary in this case on account of the large tumor mass. Postoperatively, the patient's condition seemed little changed from that prior to operation; awake and mentally clear in five minutes, warm and dry, no nausea or vomiting.

Case 10. C. T., white female, age 15 years, admitted to St. Vincent's Hospital. Diagnosis: Tuberculosis of left kidney. May 3, 1924, under ethylene-oxygen anesthesia, nephrectomy was done. The anesthesia was unusually good, the patient being relaxed throughout the operation as well as though ether had been used. Color was pink. Respiration was quiet and slow. The pulse continued at about the normal rate. On withdrawing the anesthetic, patient had reacted in three minutes. Retching, but there was no vomiting. The skin was warm and dry.

FAILURES

In this series there have been five more or less complete failures. As failures often are more

instructive than the cases that go according to rule, they are briefly summarized:

Case 11. C. W., a young colored man, was anesthetised with ethylene for a posterior gastro-enterostomy. The anesthesia was quiet and seemed good, but the patient was not sufficiently relaxed for the surgeon to work properly, so that ether was added while the viscera were being handled preparatory to doing the anastomosis and again for closure of the peritoneum. The patient's recovery from the anesthetic was somewhat delayed. Otherwise he made a good recovery following the operation. There are patients for upper abdominal surgery who require profound anesthesia to entirely abolish all reflex rigidity. It is my opinion that this patient was one of that class, for there was sufficient time taken to relax him before the incision was made and the tissues were not handled unduly.

Cases 12 and 13. S. H. and L. W., two colored women, were anesthetised with ethylene for pelvic laparotomy. The relaxation was so unsatisfactory that they were both given ether; the relaxation under ether was not strikingly good. They both proved later to be alcoholics, and alcoholics prove resistant to any anesthetic agent. It is my opinion that the unsuccessful outcome of the first of these two cases was also partly due to too early incision and unnecessarily rough traction on the abdominal muscles.

Case 14. H. C., a white man, was a complete failure under ethylene. The operation was appendectomy and drainage of the gall bladder, with a long right rectus incision. The relaxation with ether was not good at any stage of the operation. This patient proved to be an alcoholic, with sclerotic vessels and cirrhotic liver, which is probably sufficient reason to explain our failure here.

Case 15. J. J. W., white, was anesthetised with ethylene for amputation of the cervix and pelvic laparotomy. This patient had had previous anesthetics and was very apprehensive about being "smothered." However, the anesthesia and relaxation were good for the vaginal work and the first part of the laparotomy, when the ethylene supply became exhausted; a change was made to nitrous oxid-oxygen, which did not give sufficiently deep anesthesia, so that ether was added until the completion of the operation. This patient commented voluntarily on the pleasant anesthesia that had caused no sense of suffocation. It is my opinion that this case would have been

entirely satisfactory, except for the exhaustion of the gas supply.

CONCLUSIONS

It seems, then, in brief, that we have a new anesthetic occupying a place between nitrous oxid and ether, being superior to the former in some respects and very closely approaching the latter without its disadvantages; an agent with which anesthesia may be rapidly and pleasantly induced, and maintained with respiratory and circulatory functions at approximately their normal rates, with no syanosis, no sweating and no irritation of the lungs or kidneys; and very little postoperative nausea or vomiting.

We have a new gas which is making a definite place for itself as a general anesthetic and is deserving of serious consideration, further laboratory work and a very thorough clinical trial.

REFERENCES

1. Luckhardt & Carter—Physiological Effects of Ethylene, *J. A. M. A.*, Vol. 80, pp. 765-770, March 17, 1923.
2. Luckhardt & Carter—Ethylene as a Gas Anesthetic. Researches in Anesthesia and Analgesia, Vol. II, No. 6, Dec., 1923.
3. Brown, W. E.—Preliminary Report on Experiments with Ethylene as a General Anesthetic, *Ibid*, Vol. 2, No. 3, June, 1923.
4. Herb, Isabella, M. D.—Ethylene: Notes Taken from the Clinical Records. *Ibid*, Vol. II, No. 6, Dec., 1923.
5. Gwathmey, Jas. T.—Laboratory and Clinical Experiments with Ethylene and Other Hydrocarbon Gases. *British Journal of Anesthesia*, Vol. I, No. 3, Jan., 1924.
6. Brown, W. E.—Ethylene as a General Anesthetic. *Am. Journal of Surgery, Anesthesia Supplement*, Vol. XXXVIII, No. 1, Jan., 1924.
7. McKesson, E. I.—Ethylene-Oxygen (the new anesthetic). Reprint from the Toledo Technical Appliance Co. Feb. 1, 1924.
8. Papin & Ambard—Anesthesia by Ethylene. *Presse Medicale*, Feb. 13, 1924, p. 133.
9. Brown, W. E.—Explosibility of Ethylene Mixtures, *J. A. M. A.*, Vol. 82, No. 13, pp. 1039-1040.
10. Luckhardt & Lewis—Clinical Experiences with Ethylene-Oxygen Anesthesia, *J. A. M. A.*, Vol. 81, No. 22, Dec., 1923.
11. Lundy, John S.—Ethylene-Oxygen as an Anesthetic for Infants, *J. A. M. A.*, Vol. 82, No. 6, Feb., 1924.
12. Leake & Hertzman—Blood Reaction in Ethylene and Nitrous Oxid Anesthesia, *J. A. M. A.*, Vol. 82, No. 15, April, 1924.
13. Christiansen, John F.—Clinical Experiences with Ethylene-Oxygen Anesthesia in Dentistry. *Dental Cosmos*, Vol. 66, No. 3, March, 1924.

DISCUSSION

Dr. J. E. Boyd, Jacksonville:

Gentlemen, I am not an anesthetist, but I want to say that you have listened to an expert. I have had the pleasure of seeing some of these ethylene anesthetics of his not only in my own private work but in the general work at the Duval County Hospital, where most of this work has been done.

Two, at least, of these failures which he reports were on my personal patients. They were

both upper abdominal cases, and I want to emphasize the fact that neither one of these two cases did well even under an ether anesthetic. I do not believe that there can be any question as to why a patient does not do well under a gas anesthetic when the same patient also refuses to do well under ether. I believe that all doctors who have had a great deal of experience in surgery will agree with me that there is a certain definite type of patient that does well under no type of anesthetic.

I note that Dr. Day has failed to report one case, which I would like to emphasize at this time, which shows that he has at least done one ethylene-oxygen anesthetic in the case of a nephrectomy, and this case has proved a great eye-opener to myself. The patient reacted without practically any shock at all, the postoperative nausea has been minimum, and the case has been highly satisfactory. Now, anybody that has done much kidney work knows that ether is hard on these cases—ether or chloroform, either one. When I was up in Boston the men up there were doing most of this kidney work under gas-oxygen. From my observation of the gas-oxygen as compared to this one case, which means nothing, just one case—but one case is one case—I am very much in favor of the ethylene-gas because ethylene anesthesia is just a little bit deeper than that with gas, the relaxation is just a little bit better, the recovery is just as rapid, and the post-operative nausea and vomiting appears to be practically, as far as my observation goes, the same.

TRAUMA OF THE FEMALE PELVIC ORGANS*

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It is the purpose of this paper to discuss diagnosis and differentiation of trauma from other pathological conditions, and the prognosis of such trauma, rather than to discuss the means of treatment, which may be referred to only incidentally. Neither are we considering those injuries which are due to direct violence, such as punctures and contusions, since they have to be considered under general surgery dealing with such injuries in a more general way; but it is

our intention to consider those injuries which are the result of some sudden blow, or jar, or strain, or fall of the whole, or some part of the body whereby the uterus, or its appendages may be secondarily injured. This would reduce the discussion to that of malpositions and the resulting manifestations, to hemorrhage and to accidents incident to pregnancy.

To reach a better knowledge of pathological conditions, it is well, first, to understand the normal anatomy and physiology of the organs under discussion. The organs which we have in mind for discussion are the uterus and its appendages. It will be remembered that the nerves of the uterus are from the sacral plexus of the spinal nerves, and that its sympathetic nerves are from the hypogastric plexus which is directly connected with the great solar plexus of the sympathetic system, making a direct and intimate sympathetic relation between the pathologic conditions of the pelvic organs and those of the abdominal cavity, a matter that sometimes confuses the most learned and best drilled expert in making a diagnosis. The arteries of the uterus are from the abdominal aorta and the internal iliac arteries, and the veins are similar in arrangement. These nerves, arteries and veins enter the uterus laterally through the broad ligaments, a fact not to be overlooked in misplacements of the uterus. The lymphatics of the body of the uterus terminate in the lumbar glands, while those of the cervix terminate in the pelvic glands, a knowledge of which enables us to better determine whether a condition be traumatic, infective, or cancerous. The uterus is suspended about the center of the pelvis very loosely to permit of its evolution and enlargement through pregnancy and its involution following delivery. The ligamentous and areolar attachments of this organ are such as to permit the fundus to change its position ten or twelve inches vertically during pregnancy. It is easy to understand that this organ varies its position anteroposteriorly to accommodate itself to a full bladder and an empty rectum, or the reverse, these changes of position occurring several times daily, and its position may be said to be normal, whether lying forward against the symphysis pubis, being separate from these bones only by the thin walls of an empty bladder, or pushed back against the sacrum, being separated from that bone only by the walls of the rectum. It will be remembered, too, that the uterus is an organ that functions

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only through a certain period of life, and that, prior to that period and following that period of life, it is much smaller than it is during the functioning period. After the menopause, the termination of the functioning period of the uterus, it atrophies, becomes paler, and, if in normal health, is much less susceptible to injury. At birth the uterus is above the brim of the pelvis, but it soon settles down into the pelvic cavity, its normal place except during pregnancy. Laterally, the uterus may be normally nearer to one side than the other, though its usual position is about the center of the pelvis. Above, the uterus is covered with the peritoneum which forms the floor-lining of the abdominal cavity. The peritoneum covering the bladder dips down very slightly, forming a mere crease between the uterus and the bladder; but posteriorly, the peritoneum extends down the back of the uterus to the cervix and thence back up over the rectum, forming the pocket known as Douglas's cul de sac. This pocket makes more opportunity for posterior misplacement than anterior. The appendages of the uterus are the fallopian tubes, the ovaries and the round ligaments. One of each of these is attached to each cornu of the uterus and helps to hold the uterus in position.

The misplacements of the uterus are classed by the various gynecologists as ascent, descent, prolapse, antiflexion, antiversion, retroflexion, retroversion, right lateral misplacement, left lateral misplacement, torsion and inversion. Of all these misplacements, it is not conceded by any author, whom we have consulted, that any are ever due to traumatism except prolapse, retroversion and, possibly, in extraordinary cases, inversion.

Prolapse, as we all know, is uncommon except with women who have borne children. It is most often the result of injuries from childbirth, being due to the lack of support from below on account of unrepaired lacerations, lack of support above on account of relaxed ligaments, and increased weight of the uterus from subinvolution or from tumors in process of formation. There are, however, cases of prolapse due directly to traumatism in which none of the above play any part. These cases are due to extreme strain as in the act of lifting a very heavy weight. The Reference Handbook of Medical Sciences records a case of a young single woman who was making an extraordinary effort to hold up a stove and place a block under it at the same time, when she felt something give way in the pelvis, and her uterus came down so that the os projected beyond the

vulva. Such a condition might result from a fall in which a person would land on the buttocks, knees, or feet. This condition need not result in permanent injury if properly treated at once, but such cases usually go neglected until the ligaments become permanently relaxed, adhesions result from inflammatory processes, and the uterus becomes fixed in the prolapsed state, resulting in permanent injury. Immediate adjustment in proper place and a few days' rest and quiet should result in permanent cure.

Inversion is an injury that can occur only under very few conditions. It can occur only when the lumen of the uterus has been very much increased from pregnancy or from some tumor in the lumen of that organ. The condition is not extremely uncommon in cases of abortion where the fetus comes away dragging the adherent placenta after it, and, while we have not known of such a case, it seems possible for such thing to occur when a fibroid tumor is passed off dragging the fundus of the uterus downward by a pedicle. Since either of these conditions might result from traumatism, the resulting inversion might be secondarily due to traumatism. Inversion may result from the mere act of standing on the feet immediately after delivery and has been known to occur when a recently delivered mother was over a vessel relieving her bladder and bowels. It is important in all these cases to completely reduce the inversion at once so that there may not remain a partial inversion to become fixed by adhesions and the general adjustment of the tissues. Any of these conditions could occur with a person traveling and be the basis for litigation.

Of all the traumatic conditions of the pelvic organs, retroversion ranks first. This is one of the obscure conditions that has given the disablee more days in bed than any other imaginary trouble. Owing to the paucity of known facts in connection with the genital organs of various individuals, it is easy for one to lead a jury to believe that a condition of long standing is of recent origin and made to date from some alleged injury. Certainly, no one except physicians know the position of the internal genital organs of any individual, and even the best gynecologists carry in mind only a few cases in which they can testify positively as to the position of the uterus at any given time. All these matters add to the difficulty of determining the cause and beginning of these conditions.

Age has much to do with trauma of the uterus

and, especially, with retroversion. It will be remembered that the uterus, before puberty, is small and that the cervix at this time is larger and longer than the body of that organ. With the large cervix and diminutive body, the tendency of the uterus would be to right itself even though it were retroverted, and we have not been able to find any record of a case of traumatic retroversion occurring before puberty, neither do we believe such thing possible in a normal girl. It is during the child-bearing period of a woman's life that retroversion is most liable to occur, and then it is that the symptoms are most pronounced when the accident does occur. As puberty approaches, the body of the uterus develops to its normal size, and then settles down into the true pelvis. The body now becomes heavier than the cervix, and, when the accident of retroversion does occur, the weight of the body tends to hold it in that position. There are many degrees of retroversion, and it has been found by some of the best gynecologists that forty per cent of women who have borne children have partially retroverted uteruses without any inconvenience, many of them not even knowing that the condition exists. Anything increasing the weight of the body of the uterus, as tumors, or early pregnancy, increases the tendency for retroversion. Traumatic retroversion may result from a fall, or sudden jarring of the body, such as landing on the buttocks. If the retroversion is slight, the uterus may adjust itself, but, if the retroversion is near complete, it remains so until it is relieved by manual adjustment. In complete retroversion the pain is intense from torsion of the broad ligaments and the resulting pressure on the nerves and blood vessels contained therein. Neglect of this condition may result in swelling and much tenderness of the uterus. One suffering from traumatic retroversion has difficulty in locomotion. Continued neglect of this condition may result in readjustment of the pelvic organs so that the condition cannot be relieved except with the greatest difficulty; but, if a person suffering from traumatic retroversion is given proper treatment at once, the condition may be easily and completely relieved. In a case of traumatic retroversion, the relief is immediate when the uterus is put back into place, and, if it is done immediately, the relief is usually permanent. Beginning with the menopause, the uterus atrophies. The blood vessels become diminished in size, and the uterus becomes paler instead of the pink appearance during its functioning period.

It is now past its time to function, and it loses its high degree of sensation which it had during its functioning period. Its lumen decreases, sometimes disappearing entirely. It loses its rigidity and merely adjusts itself to whatever position it may find to allow the other pelvic organs to function. Malpositions are less liable to occur, and, when they do occur, the symptoms are less pronounced. In the atrophied state, retroversion is less liable to occur, and, when it does occur, the uterus may adjust itself. During the child-bearing period retroversion may result in hemorrhage, but this is less liable to occur after the menopause, unless the uterus is diseased. Certainly, a uterus hypertrophied from cancer, fibroids, or some inflammation might be readily retroverted, but this would be due to the pathological condition already existing as much as to any traumatism that could produce the immediate retroversion.

Diagnosis: There are many conditions that may retrovert the uterus. In fact, there are cases which are probably congenital. We are concerned here in determining which cases are traumatic and which cases are due to other causes. As we have said above, cases of slight retroversion from traumatism, usually adjust themselves and need not be considered. In the complete cases, or those near complete, the tortion of the broad ligaments with the included nerves and blood vessels, cause intense pain and interfere much with locomotion, while cases of longer standing have adjusted themselves so that these symptoms are less pronounced. While all cases manifest interference with the functions of the bladder and rectum, cases of more recent traumatism have the more marked symptoms. Hemorrhage may, or may not, be a symptom. In either case it is not usually profuse. The real diagnostic symptom lies in the result of treatment. If the uterus is recently retroverted from traumatism, it may be put back into its normal position where it remains without any special tendency to return to the retroverted position, and, immediately following the replacement, the pain and other disagreeable symptoms are relieved, and, in a few days, when the soreness and congestion abate, the patient becomes normal; while retroversion from other causes, being of longer standing, gives little relief by replacement, and the uterus returns to the abnormal position where it had remained before so long that it had become more or less adjusted to the malposition.

Prognosis: Any case of traumatic retroversion, uncomplicated, may be permanently relieved if properly treated immediately following the injury. If a case be neglected till the other organs of the pelvis have adjusted themselves to the malposition of the uterus, the case is less promising. In cases of pregnancy, miscarriage is the rule.

CASES REVIEWED

Case 1. Several years ago I was called to a Mrs. W., who had just had some kind of accident, the nature of which I have forgotten. Upon arriving, I found Mrs. W. lying in the bed, suffering intensely from pains in the pelvic region. The family were applying all the home remedies available without any relief. Upon examination, I found the uterus retroverted completely and somewhat enlarged. I learned from inquiry that she was about two months pregnant, which accounted for the enlargement. Putting her in the knee-chest position, I soon adjusted the uterus in its normal position, gave her a sedative and soon left her feeling comfortable. A few hours later I was called back to find her well progressed with an abortion. Later experience has confirmed my belief that abortion is the rule in such cases.

Case 2. A few years ago a lady came into my office one afternoon, suffering intensely from pelvic pain and soreness so severe that she could hardly walk. Upon examination, I found the uterus retroverted and so swollen and tender from having been a few days in that position, that I was unable to reduce it to its normal position at that time. She was not so situated that she could go to the hospital at that time, but would return the next morning, when I should carry her to the hospital for whatever treatment that I should find necessary for her relief if I were unable to relieve her. I gave her an opiate and let her go home. The next morning I was able to put the retroverted uterus back into its normal position, which gave Mrs. G. immediate relief, and, after a few days that were required for the congestion to clear up, her condition became normal. I do not remember the cause of this accident, but I do remember that it was of a few days' standing before she received the necessary attention to relieve her.

Case 3. Not long since, I was called to see a laundress who was suffering from violent pelvic pains brought on by lifting a heavy tub of water. The neighbors had gathered in to help and were

applying hot stapes without availng anything. When I examined, I found her uterus retroverted and soon replaced it. The relief was immediate, and I left her in five minutes feeling comfortable. A week in bed was all that was necessary to complete the job and have her back to her work. No further treatment was necessary and none was administered.

Case 4. The above cases give a clear picture of traumatic retroversion: The intense pain, the interference with locomotion, the enlarged uterus and the immediate relief following replacement of the uterus. Another case came to my office some weeks ago. The lady was suffering from lassitude. She could walk but short distances before she was tired, and she had found walking so disagreeable that she was inclined to lie in bed most of the time. She said that she had never been lazy, but that she had lost all the energy that she had ever had. Upon examination I found her uterus incompletely retroverted. She then told me of a slight accident that she had suffered several months previous to that time. She was inclined to date her lassitude from this accident. Whether the accident, or something else, was the cause of her condition, I am not able to say, but her uterus had remained in that retroverted position so long till it had become second nature for it to be there. With some difficulty, I reduced it to its normal position, and, finding that it was not inclined to remain there, I packed the posterior cul de sac of the vagina with cotton tampons, and let her go, feeling fairly comfortable. The next week she returned without any improvement. The uterus had returned to its retroverted position. I then gave her a Hodge's pessary, showing her how to remove it and replace it, and let her go with the understanding that she should return if she were not relieved. Since that time I have seen her and find her condition like others of this class. She is some better while she keeps the uterus pushed forward with the pessary, but the condition is little better when she is without the pessary. It is not a perfect cure, neither do we expect a cure by any means less than Alexander's operation, which is not always entirely satisfactory. While this patient dates her lassitude from a minor injury, I am inclined to doubt that the injury was the entire cause of that retroversion. This lady had worked in a business house, and, on account of embarrassment, she probably had allowed her bladder to go too long at too frequent intervals without emptying it. This had probably been

repeated so often that the uterus had become fixed in the retroverted position. If it was really of traumatic origin, it was of the neglected type, and could not be relieved by simple replacement. It presents the picture of that type due to other and more prolonged cause than that of traumatism.

INDICATIONS FOR MASTOIDOTOMY*

B. F. HODSDON, M. D.,

Miami, Florida.

Perhaps I should apologize for calling your attention to what may seem perfectly clear to every practitioner of medicine, but even so a time-worn subject may provoke a discussion that will be of some benefit to the essayist, especially if tinged with criticism.

Should this prove to be the case, I will feel that the time spent in reading this paper has not been altogether an aching void. I have endeavored to make this paper so brief that the Chairman will not hold the gavel with impatience, and say "one minute more," as he observes the wearied and painful expression of the audience.

The indication for a mastoid operation is not always a clear-cut picture, even to the otologist. The diagnosis may be plain in the majority of cases, but he is often confronted by the prejudice and dread of an operation that is always manifest in the patient, his family and friends and, sometimes, the doubtful attitude of the family physician.

The operation may be deferred, refused, or another otologist called, whose conservatism may be regarded as superior knowledge, for the patient and family will welcome any advice or method that sidesteps an operation though temporizing may be far more dangerous than the operation in fairly skillful hands.

Now the patient may recover without the operation and who shall say which was the more rational treatment? Operation? No, except by the otologist that advised the operation. Temporizing? Yes, by the patient, family, friends, and, no doubt, the family physician.

The hesitation about an operation for mastoiditis after a positive diagnosis has been made, knowing, or perhaps thinking, that the patient may recover, or apparently recover, by tempo-

rizing, has lost far more cases than where the operation has been done as soon as feasible after the diagnosis was made. In a general way the operation is indicated when the acute suppuration of the middle ear has extended to and involved the mastoid cells, and shows no tendency to recover under regular treatment after one or more incisions have been made in the tympanic membrane.

The indications are perfectly clear in cases which have been observed, from the beginning of middle ear inflammation, and when development of mastoiditis could be plainly followed by the classical symptoms.

The operation in such cases is a matter of necessity where in spite of appropriate treatment the bone infection could not have been prevented, but the decision is more difficult in cases of acute mastoiditis which could only be observed after prolonged suppuration, which have not had the proper treatment or perhaps no treatment at all.

Experience has taught us that there are cases simulating mastoiditis, that are nothing but inflammatory irritation, and disappear as soon as the patient is given the opportunity of rest and care, more or less rapidly according to his vital resistance.

In the absence of severe pain and high fever a waiting attitude under strict supervision is justifiable for a time, unless one or more positive indications are present.

Now, the value of separate symptoms, so far as indications for operation are concerned, depends upon the duration of middle ear suppuration; in the early stage of mastoid inflammation, it is not unusual that there are symptoms such as pain or pressure and slight swelling behind the ear; but as a rule these symptoms subside within a few days after paracentesis and the ice bag over the mastoid.

The positive symptoms: One—Severe lacerating pain on pressure at any point on the mastoid bone, that has not been relieved or modified by paracentesis and ice bag behind the ear within 24 hours. Two—A profuse discharge with increasing pain radiating over the entire side of the cranium not relieved by ice bag and local treatment within 24 to 48 hours. Three—A sudden cessation of discharge with increasing severe pain not relieved by paracentesis and ice to the mastoid, is another positive indication. Four—Swelling of the neck on the same side due either to a cervical abscess or an infected posterior

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cervical gland. Five—Complete deafness on same side with nausea, vertigo and mystagmus. Six—Paralysis of abducens (the sixth nerve external rectus) as indicated by diplopia or internal strabismus on the same side during a middle ear suppuration. Seven—Facial paralysis on the same side as mastoid involvement. I have purposely omitted the blood, bacterial and X-ray indications to be brought out in the discussion or in closing the paper.

Case Report: Patient, Mrs. M., 34, of very nervous temperament, not well nourished, married, two children, came to the office for treatment of a nasal discharge, with pain over the right maxillary antrum.

On examination a very small streak of pus was seen beneath the middle turbinate, on the right side. Temperature 100, pulse 90, respiration 18. Transillumination showed both frontal and the left maxillary antrum clear, but the right antrum of Highmore transmitted no light.

These findings were corroborated by the X-ray, also a clear sphenoid and ethmoids. The case was treated locally for two or three days which reduced the inflammation to some extent, but pain in the antrum and headache continued. Four days after the first visit, she went to the hospital and the antrum was opened through the nasal wall without removing the inferior turbinate; irrigation with hot salt solution brought out no pus, but several hours later a profuse discharge drained from the antrum.

Examination for bacteria at the Diagnostic Laboratory showed a pure culture of pneumococcus. Next day, after a chill, the temperature went to 104. Second day only a slight chill followed by a fever of 103. Third day, fever 102. The fourth day after opening the antrum, there was a severe pain in the right ear and on examination the tympanic membrane was found bulging.

A paracentesis was done and the ear drained freely for several days, although the patient refused the ice bag over the mastoid except for short periods of time with long intervals.

Examination for bacteria at the State Laboratory showed only the staphylococcus albea, but several days later at the Diagnostic Laboratory streptococci were found.

As the temperature became normal with only a slight discharge from the middle ear, and no tenderness over the mastoid bone, the patient was allowed to go home, provided she would take a nurse to carry out the treatment adminis-

tered at the hospital. On arriving home the ice bag was abandoned altogether and the nurse left the second day, and a practical one substituted.

I did not see the patient for several days after she left the hospital, thinking that the nurse was with her, and would advise me if all was not o. k. and the patient convalescent.

About five days after the patient left the hospital I was called, and found her with some temperature, headache and pain, but no tenderness over the mastoid except at one point, about one and a half inches posterior to and on line with the lower wall of the external auditory canal, not more than a third of an inch in diameter.

There was a discharge from a small opening in the drum membrane, an incision was made in the drum down to the periosteum, irrigation and suction brought away considerable pus, temperature came down and the headache was relieved, but the tender spot on the mastoid was still noticeable on pressure.

Suction, irrigation and ice made the patient very comfortable and apparently doing well for three days, when she complained of seeing double at times. The following day there was a pronounced internal strabismus.

I then strongly advised operation that I had previously suggested and after some persuasion and consultation the patient was taken to the hospital for operation.

No pus was found in the antrum, or any part of the wound, except in the diploe just external to the wall of the lateral sinus in trimming down eburnated bone with the roundgear forceps about ten or fifteen drops of pus trickled down.

The wound was closed over a rubber drainage tube and blood clot extending from the antrum to below the site of the mastoid tip. A strip of gauze was placed in the external canal, wound dressed and bandaged.

The outer dressing was removed the next morning, the second day after the operation all dressings were removed and the rubber drainage tube withdrawn about one-half inch and cut off.

On the third day I removed the drainage tube; but the fourth day the patient had single vision, with no sign of strabismus; the stitches were removed on the sixth day, and the patient left the hospital on the tenth day and, as the stereotyped saying is, "The patient made an uneventful recovery."

I have mentioned this case because it seemed an atypical case to me, the chief points of interest being the small area of circumscribed tenderness,

the paralysis of the sixth nerve in the absence of other pronounced symptoms.

The small amount of pus found at the operation, localized so far from the antrum, the rapid recovery of the sixth nerve following the operation, has caused me to wonder if the patient had been more compliant in submitting to local treatment in the early stage of middle ear suppuration would the operation have been imperative?

DISCUSSION

Dr. A. H. Freeman, Jacksonville:

Regarding the bacterial indication for the mastoid operation, it is well understood and known that two-thirds of these cases are due to streptococcus capsulatus and hemolyticus, and that the other third are due to pneumococcus and staphylococcus or mixed infections. Of course, as you know, the streptococcal infections are the ones that are most apt to give us trouble, and the most serious trouble.

Dench, in his masterly work on this subject, states that the kind of infection you have in the case is what you are going to have afterward. In his study of the mastoid, he shows that 86 per cent of all mastoid conditions are due to streptococcus, that 66 per cent are due to staphylococcus, that 10 per cent are due to pneumococcus, that 92 per cent of the mixed infections with streptococcus and 33 1-3 per cent of the mixed infections without streptococcus, come to operation. So streptococcus is by far the most important infection you have to deal with in the mastoid.

The blood picture is the same as in suppuration.

Crockett, in the *Annals of Surgery* in 1906, thought that he had made a discovery in the fact, as he stated, that the white blood cell count increased gradually up to 20,000 and did not go any higher. His discovery is not verified by later studies.

Of the blood culture in fifty-five cases of acute ear involvement made at the Manhattan Eye and Ear Hospital, New York City, sixteen were positive blood cultures, on operation four of these proved to be lateral sinus thrombosis cases, two were frontal sinus cases, one meningitis, and nine were acute mastoid cases, all of which recovered with a simple mastoid operation. I think this proves that blood bacteria in mastoiditis does not always mean a lateral sinus thrombosis.

Phillips puts it this way: That he does not put

too much dependence on blood cultures except when verified by other clinical symptoms.

X-ray indications of the mastoid operation: Your pictures must compare the diseased with the sound side. In the early stages there is only a clouding of the mastoid cells. Daily X-ray studies will show the progress or regression of the process to normal. The X-ray does this for us: It determines definitely the type of mastoid we have, whether a diploetic, pneumatic or dense bone. The wall outline in the first class of cases is hazy. When bone softening occurs, the wall of the sinus groove becomes indistinct. In the third stage, you have total loss of the outline in the area covered by the destructive process.

In the indication for operation, the time limit should never be under eight days. Local tenderness, if it has been present and subsided, should it return, always indicates an operation. Continued high temperature, or if temperature is of the see-sawing or skyrocketing type, indications for operation are positive. If sinus thrombosis and acute mastoiditis occurs in a chronic case, the indication for operation is made positive, as bacteremia must be then present.

Differential diagnosis includes Herpes Zoster, three, four, or five days before eruption occurs. Spheno-palatine irritations must be considered. If cellulitis occurs in otitis externa, guard against later danger by having smear made. A broken down retro-auricular gland which produces intense edema around the ear, would be another positive indication for operation.

Dr. Sackett, St. Petersburg:

I have been particularly interested in this subject from the standpoint of the internist. It is not often that we have a chance to get back upon the specialist, and I might say also that it is not often that they get a chance to get back at us.

At one of the hospitals in St. Petersburg last winter the ear specialist had a chance to use an internist. He was getting along nicely in one of his ear cases—had done a paracentesis, had an ice cap on the outside of the head and the child was getting on very nicely, as he thought. Still he was looking out all of the time, of course, for a possible mastoid involvement because this child had a history of chronic and subacute otitis media. All of a sudden the child developed a very severe pain in his left side, and Friend Specialist was very much at a loss to know what might be the trouble in the left side. Called for me. Lo and behold this baby, instead of having a mastoid,

had an acute lobar pneumonia involving the lower lobe of the left lung. During the course of this disease, which ran a normal course, he developed an acute gastritis and pyelitis, with blood and pus in the urine. And during this time the child was about as sick a boy as you can imagine.

Now, I personally, have never, as an internist, taken responsibility in ear cases. My friends, the specialists, all say that I am a friend because I call them in. I believe that all internists should call in a specialist as soon as they get an ear case. I cannot be too positive for that, because I don't believe there is any internist in the world who has any right to take responsibility in ear cases. I work with the specialist, and it does so happen that once in a while the specialist may have an occasion to use the internist.

Dr. L. C. Ingram, Orlando:

The problems mentioned by the essayist, that is that we do not always have a clear-cut picture in our symptoms to formulate a diagnosis, also that the cooperation and consent of the patient or those in authority to give us consent is not always forthcoming, of course as we know are problems in all of the diseased processes that require surgical interference, but I do believe that they are more prevalent in this one particular condition of the operative mastoid than possibly any other that is dealt with in the human body.

The prophylactics, or what I may say, are those measures that the Doctor has mentioned that would limit a number of the suppurative mastoids that would require surgical interference. He mentions the paracentesis of the drum membrane and the use of the ice bag, etc. Paracentesis of the drum membrane, I believe, is the most important measure that can be used to limit the number of operative mastoids. When I mention the value of paracentesis of the drum membrane, I refer to it is an early measure. Now, we know that we are not always able to do an early drum membrane paracentesis—we do not always get these patients early. Many times the patient does not seek assistance or relief from his trouble until it has advanced to the point where we cannot do an early paracentesis. If we do a paracentesis of the drum membrane and immediately get pus, we have done the paracentesis too late. Another measure in the plan of prophylactics, we might say, are those diseased processes when the obstruction is in the nose or nasal pharynx, that in so many instances causes suppuration in the mastoid. Of course, when we speak of these we

mean that these conditions should be relieved when we find a suppurative middle ear, to prevent recurrent attacks of suppurative middle ear or, if possible, the necessity of an operative procedure in the mastoid.

The question of the surgical interference of the mastoid, of course, would infer that not all suppurations of the mastoid are surgical or require surgical interference. We know that to be true—that only a small number of them require surgical interference because of the fact that the tympanum and that antrum of mastoid cells are one continuous cavity usually, and it would be utterly impossible to have an abscess in the middle ear and not have an abscess of this adjacent cavity. We know that it would be impossible to have a quantity of pus as is obtained in a suppurative mastoid to come from that little space, the middle ear. We know it must be coming from the adjacent cavity—from the opening down to the eustachian tube or deep in the cells of the mastoid. Why, then, do we have to in some cases interfere surgically in order to relieve the patient? It is because it has extended beyond the mucous membrane into the adjacent bone tissue and there set up destructive processes that are going on and on, and require some surgical interference in order to reach the adjacent cavity beyond the drum.

Now, the symptoms—what are they? We know first that we had a disease of the middle ear or primary mastoid, but there are very few of those. We then have had a suppurative middle ear. Usually it has been at least two weeks. Seldom do we have a suppurative mastoid that requires surgical interference within two weeks. It takes about that time for the destructive processes to get to the bone where it requires interference. Also, as the essayist has said, the temperature is not high. In a typical mastoid the temperature is 100 or 101. If you have a high temperature, you have some other complication—some complication that produces a high temperature. Seldom is it a simple mastoid. There is that tenderness the Doctor spoke of, usually the most acute pain or tenderness is over the antrum, anywhere over the mastoid or down in the tip of the mastoid. On placing the little finger over the periosteum it is immovable, as it always is in cases of periostitis. One of the most important symptoms that we have is sagging of the posterior wall of the external canal. I do not believe that you will find a single case where there is sagging of the posterior wall of the external

canal that will not require surgical interference. I don't think it will get well without some drainage and without surgical interference.

I might mention here another method known as the Sawbeck test, which is a test for obstruction deafness. Your Sawbeck test will show whether or not the air or bone conduction is limited. The use of the Sawbeck test is most important in diagnosing the primary mastoid.

Dr. Hodsdon says that he has left out intentionally several points in the paper, including blood picture and X-ray, and only mentioned that they were important. We know that we have a leukocytosis. The X-ray shows us the clouding of the mastoid. All together we must take up these symptoms in order to make up a complete diagnosis and determine the operative interference in mastoid suppuration.

Dr. R. L. Cline, Lakeland:

In the prophylactic treatment, the most important thing, to my mind, has been omitted. Most of our acute mastoids occur in children, probably because so many of them have obstruction to their air wave. I believe in the vast majority of our acute mastoids you will find large adenoids and diseased tonsils. So, in your prophylactics you should not only open the drum membrane, but remove the primary cause, which is adenoids and tonsils.

Now as to the time of operation. To my mind there should be no time limit. We should certainly wait twenty-four or forty-eight hours, often one or two weeks. I think that the vast majority of mastoid conditions are never diagnosed or recognized, because, as Dr. Ingram says, I believe it not probable to have a middle ear containing pus that does not extend to the mastoid cavity. I recently had that very forcibly impressed upon me. But this was one of the unusual cases. About twelve months previous I removed the adenoids and tonsils, and made a thorough removal. This case developed an acute mastoiditis, which to my mind was even more unusual because of the clean throat and superior pharynx. This child, about 14 years old, developed a most virulent acute mastoid. I at once made a wide opening in the drum membrane, but instead of the child getting better he got worse. The pain and temperature remained the same for two or three days, and all of the time I felt that it was so virulent that we had better consider operative interference. The child developed pneumonia, and I waited day after day thinking

I would like to operate, save for the pneumonia. He continued having very severe localized tenderness, yet after the expiration of about 12 to 14 days, the mastoid subsided without operation.

THE RELATION OF TRAUMA TO MALIGNANCY*

R. B. HARKNESS, M. D.,

Lake City, Florida.

The fact that cancer is apparently on the increase, together with the fact that the disease is one of the major causes of disability and death, furnishes ample justification for any practical discussion of this problem.

I am attempting to bring before you some phases of the cancer problem, that I believe are not given due prominence by the average physician in his daily contact with the public.

I am not offering any new scientific facts, but I am urging the physician to put his knowledge to a more extensive service in the prevention of cancer. For in prevention lies our greatest service to mankind so far as this problem is concerned. This work of prevention can be accomplished only by education of the laity, and it is up to the physician to do this educating.

The true cause of cancer is still shrouded in mystery, but there are many known contributing factors, some of them almost constant, and it is the physician's duty to pass such of this knowledge as can be assimilated by the lay mind along to the public.

The age incidence is an important factor, but can easily work harm by fostering a too fixed opinion as to the occurrence of cancer at a certain period of life. We have all seen cancer develop in the young.

Heredity also undoubtedly plays some part in the production of cancer; just what this part is we do not know.

The one predisposing factor that is constant in the production of cancer is trauma. Without trauma in some form or degree, we do not have malignancy.

Foster¹ says: "There is a general suspicion that repeated slight trauma is a cause for carcinoma, while it is one severe blow that causes

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sarcoma. We do know these malignancies are post-traumatic.

In this same article Foster brings out a point of considerable importance in the diagnosis of bone lesions. He states that if more than one bone is found involved the growth is infectious and not malignant. I take it that this restriction would only apply in acute or comparatively recent conditions.

Menetrier² makes practically the same plea in a highly technical article which I do not quote, on account of the great length of his argument.

True, this trauma may be of such character as to be unnoticed, but it is always there and without it we do not have malignancy.

A few outstanding examples of this unobtrusive character of trauma that all of us have seen result in malignancy, are the lacerated cervix, the eroded or fissured nipple, the chronic ulcer of the smoker's lip, the ill-fitting dental plate or bridge. These examples might be multiplied, but this is unnecessary. It is just here that the physician may serve his generation well. A passing admonition may go unheeded, but if the physician will take the time and pains to explain to his patients what a fearful risk they are running in allowing these chronic irritations to continue, a great many will seek relief while the condition is perfectly curable. However, we must be careful not to implant in the minds of our friends an insane fear of some certain and mysterious calamity. But we must take the time to assure them of the certain curability of these precancerous conditions, and the great risk they are running of developing an incurable condition by neglect.

Occasionally we have malignancy develop after some particular injury, no different in its character from the thousands of injuries sustained by other individuals, or even by this same individual, with no resulting malignancy.

These cases of malignancy usually, of the long bones, dropping, as it were, from a clear sky, are most interesting to study, and are least understood.

Just why the reaction to trauma in the tissues of one person will be cancer, in another, bone cyst, giant-celled tumor, proliferating periostitis, or ossifying myocitis, while in thousands of others the same character of injury results only in the restoration of the tissues to normal, we do not know, but we are convinced that cancer, usually sarcoma, does occasionally result directly from trauma.

This fact has been recognized by the medical

profession for a long time. Gross³ published an article in 1879, in which he states that nearly 50 per cent of the cases of bone cancer listed in the literature of that day gave a history of antecedent trauma.

Coley⁴ finds in a review of fifty cases of sarcoma of the long bones, that 56 per cent gave definite history of injury preceding the development of the bone tumor.

In the same article Coley lays down the following conditions that he thinks must be met to establish direct relationship between the trauma and the resulting malignant condition.

(*International Journal*. Page 82. Four conditions) :

1. There must be positive evidence of a definite local injury. The severity of the injury is not of great importance; even a slight injury, such as striking against a piece of furniture, a fall, or a kick, may be sufficient to be a causitive factor. The injury may be in the form of a recent fracture, as was found to be the case in six of fifty giant-cell tumors.

2. There must be evidence of integrity of the part prior to the injury—in other words, it must be reasonably clear that there was no tumor in the bone at the time of the injury.

3. The site of the tumor must correspond with that of the injury.

4. The date of the appearance of the tumor must not be too remote from the time of the accident.

Bloodgood⁵ states that the industrial commissions of a half-dozen States have ruled that in cases of malignancy developing after accidents, should there be no evidence of prior malignancy, the direct relation of the trauma to the subsequent malignancy must be recognized. In the same paper he states that in reviewing one thousand cases of malignancy, about four hundred of which were sarcoma, he found two cases in which immediate X-ray showed bone negative, and later developed malignancy.

We can easily see that the industrial physician is placed under a tremendous responsibility. He must be the arbiter between employer and employee, and it is to him that both look for a square deal.

To this end, every injury, no matter how trivial, should have careful attention, and while entirely impracticable to X-ray all injuries, certainly all in which there is a question of injury to the bony structures should be X-rayed. In all cases slow in healing or showing reaction out of

proportion to the severity of an injury, the physician should safeguard the situation by having an X-ray examination, and this repeated, should the case continue slow in clearing up.

It is needless to add that all such cases should be given a Wassermann.

CASE REPORTS

Case 1. J. J. H., white male, age 45. Railroad engineer. Consulted me January, 1912, about a small lump on his left leg. Family history negative. Physical examination negative except for an enlargement just below tuberosity of left tibia. This did not have the appearance of an inflammatory enlargement, nor was it sufficiently painful or tender. Patient gave history of having struck his leg against a crosstie about three months previously in jumping from his engine. Did not think that he was hurt and had not noticed the contusion after the first few days, until he found the enlargement. Leg was placed at rest for a few days but did not improve. Wassermann was negative. Specimen of tumor was removed and submitted for immediate examination, which was done by frozen section method. Pathologist's report was spindle-celled sarcoma. Amputation in mid-third of thigh. Recovery, and patient has remained well, so far as any recurrence is concerned.

Case 2. William S., white male, age 8. Brought by his father in June, 1921, on account of swelling of his right leg. This was found to be enlarged to a considerable extent, the swelling involving more especially the outer aspect of the leg. Family history was negative. Physical examination negative except enlargement of leg. Child had been playing while at school several weeks previously and had been struck on leg with a stick; no apparent damage. The swelling had been coming on for several weeks. X-ray examination showed that the growth was confined to the fibula, which was extensively involved; the growth apparently starting in the mid-third.

On account of the extensive involvement of the soft tissues amputation was considered the safest procedure but was refused. Patient was lost sight of until September, 1921. At that time the leg was much enlarged and X-ray examination showed that the fibula was practically destroyed. The tibia was still uninvolved. Amputation with unfavorable prognosis was accepted, and was made high up in upper third of thigh. There was a good operative recovery, but the child died in

about three months. I did not see the patient in last illness, but from the history the cause of death was metastasis in liver or lungs.

DISCUSSION

Dr. J. W. Alsobrook, Plant City:

I have enjoyed Dr. Harkness' paper—not so much as for what he tells us about the cause of cancer—but his calling our attention to the fact that this is a very, very important question.

The Cancer Commission has gotten out a little pamphlet which you can read in two hours, telling us all that we know about cancer. In that pamphlet they discuss the symptoms, type, and time for operation in practically every region of the body. Therefore, they devote very little time to the causes of cancer. It is cheerful to hear any one speak on the prevention of cancer. I hope the day will rapidly approach when we can, with some degree of certainty, feel like we can do something to prevent cancer. But while I was listening to the Doctor read his paper, I was just thinking that the man who is doing general surgery, with the various number of automobile accidents that occur every day, if he had to look on every one of these little minor injuries as a potential cancer.

I believe in my personal experience I have seen a few cases of sarcoma follow trauma, but the percentage is very, very small, and I don't believe there is any way in the world of knowing which case will cause a sarcoma and which will not. I think we will all be a lot happier if we do not consider traumatic irritation as a potential cancer very seriously.

I note that Foster, who was quoted by the essayist, has a suspicion that trauma causes sarcoma. I believe it is caused and has been after many years of constant repeated irritation, but I don't believe that you can class irritation and trauma as synonymous terms, although the Doctor may have used them in a similar manner in discussing the cause of carcinoma. That seems to my mind the greater cause of the larger number of carcinomas, but as to what is the cause of sarcoma, it is absolutely impossible to tell. You see them from the cradle to the grave. We find them in infants. I remember one of my cases. We thought he had a peri-nephritis abscess, got him all ready and operated. We found he had a sarcoma of the kidney. Fortunately we completed the operation safely, although the patient died. The little fellow died of shock. One other

patient of mine, who was less than two years old, had sarcoma of the mesentery. He developed gastritis and died in less than eight weeks. It is appalling when you look at the lack of knowledge on the cause of malignancy. I hope that this paper will stimulate a lot of thought along that line alone.

We have had a wonderful cancer commission that has been working a long time, and they publish their findings in a little pamphlet that can be read in two hours—and that is what we know about cancer.

Dr. E. H. Teeter, Jacksonville:

This subject has impressed me for years. As the Doctor states, the precancerous lesions are moles, warts, fissures, torn cervices, etc. These he says are precancerous lesions. In my work of surgery, I have known people to come to me with cancer from a mole, or wart, and many times they give me a history of getting an injury to that mole or wart. This is followed by a certain amount of inflammation and infection, and following this the growth commences to enlarge. I think that the great majority of cancers are caused from this one thing, and that is—injury with inflammation.

You may have the injury with traumatic inflammation, or you may have the injury with inflammation caused by infection. I feel that the majority of cancers are caused by one of these two things.

Dr. T. G. DuPuis, Lemon City:

This subject is a very interesting one. In speaking of trauma, I am somewhat of the opinion, as one of you gentlemen brought out, that if all cases of potential injury caused active malignancy, it would extend so rapidly that it would include the greater part of our country in a very short time. However, I do feel that in the treatment of trivial hurts and wounds, a great many times, if we understood the true nature of them, we could do much to prevent future malignancy.

I wish to say again, it is the little things that we meet in our daily practice that count. Most of us have gotten the idea that if we don't get the big cases we are not doing good work. It is the little details in the everyday commonplaces—they are our precancerous stages.

There is one more point. Much progress along this line has been made through education, that is information largely through a regular provision that teaches that cancer is inherited, and any man who would ask us how it is inherited is an

ignoramus. It also teaches preventive measures. Many physicians say that the little conditions, such as pimples, moles, scars and little benign tumors that patients come in with are cancerous. He does not tell the patient the truth because he will lose his confidence, but prepares some of the regular things to help him, and the patient goes out and proclaims him a great savior. Now, gentlemen, that is a mistake. It is a wise man who makes mistakes and gets better. There is no help for the man who cannot make a mistake. When we tell a patient he has cancer, let us know when to speak and know what we are diagnosing. When we tell him it is a benign tumor or simple infection, to go on and not notice it, let us beware of what we speak, for these are things that are going to be talked over outside, and may be grossly exaggerated. The least aggravated person will do that. Many times he will go to some fellow who proclaims that he is a specialist—who in reality is a freak. To keep our patients' confidence we must tell them the truth, but we must know that it is the truth. If the condition is benign we know it is easy; if it is malignant we have to say so. Frankness and truth have never been too good nor too serious, therefore let us put it plain to the patient.

Dr. Vaughan, Tampa:

I would like to ask Dr. Harkness one question regarding this subject, and that is: Does cancer go hand in hand with civilization or not?

Because, in my experience in British New Guinea, which has a gross population of some three million people, we never came across a single case of cancer. When I say "we," I submit the names of Sir Wm. McGregor and several other medical men who were stationed there. None of us ever saw a case of cancer. These natives were evidently immune. If trauma had been all that is required to produce cancer, I am sure there would have been a great many cancers, because on the least provocation a native will pick up a club and land you on the back of your head—or rather his neighbor. Now, I want to know if this causes, or could this cause, cancer or is it that cancer is not known amongst them?

Dr. Jeffrey, Coconut Grove:

This question of cancer has been thrashed out for the last 20 years, and before that, and during that length of time everybody who has been doing any serious work on the question has taken the old *Connhein* theory and has tried to revise it. But the more they talk, the truer the *Conn-*

hein theory becomes. These talks have been all the way from minor institutional studies to the more careful work done by the Rockefeller Institute. The best men of the country have been working for several years on the National Cancer Commission, and their answer is that they don't know. We don't know.

There has been unquestionably a tremendous increase in malignancy in the last several years, and it is on the increase today. There are perhaps two reasons for that increase which have nothing to do with the existence of the cancer itself. One is that the average life has been prolonged over a considerable period of time. Reasonably suppose that the auto injury is carried over five, ten, or fifteen years of life, and you will readily see how that would cause an increase in cancer cases. Another reason is the question of more accurate diagnoses today—the principal thing as I see it.

Now, the education of the public is going to teach the layman, and particularly the laywoman, in the event of these conditions, to seek relief early. We all know that if we get our malignancies early enough, and if we get them in a condition where we can do a radical excision, we all know that these people have a far better chance of recovery than if they run along to a time when all we can do is a relief operation or none at all.

Now, there is one more point—the question of the precancerous state or conditions. Several men have gotten up a list of these. In their opinion, if subjected to irrigation, trauma, inflammation, etc., can produce cancers or malignancy, and these have been called the precancerous stages and conditions. Also pimples, moles, warts, lacerated or eroded cervices, etc., have been called precancerous conditions. Gentlemen, I might say if the simple auto accident or the lady who gets hit on the head with a club; if every mole should be looked at as an incipient cancer; if every pimple or carbuncle should be looked at as a potential cancer; if every eroded or lacerated cervix has to be looked upon as a potential cancer—then I don't want to practice medicine any more.

Dr. R. B. Harkness, Lake City (closing):

I want to thank all of you for the very liberal discussion you have given this paper. That is what I had hoped to elicit. It is only as we discuss these problems freely do we get anywhere.

In conclusion, I want to say that I do not want you all to fuss over these little injuries or lose

any sleep thinking that you are passing up a potential cancer. What I asked you to do was to treat these minor injuries carefully, for in most instances these results may be abolished in the application of a little iodine and putting on clean dressings, and having your patient come back for observation, or certainly impressing on these patients that if any untoward symptoms come to light that means he must come back for inspection. Now, I was very careful to state that it was not necessary to X-ray all of these injuries, but we certainly should give all potential bone injuries the benefit of an X-ray examination. That should not be considered as too great a burden upon us. A very striking separation is made by Foster between these chronic forms of irritation, factors that produce a carcinoma, and the occasional isolated trauma, which he believes to be one of the causative factors of sarcoma. As he states, "We do not think these cases of malignancy are post-traumatic."

Dr. Teeter very properly alluded to what are the precancerous conditions. The precancerous conditions as are recognized by us generally are not precancerous and certainly not early malignancy. Your warts, your moles, and your pimples are your true precancerous conditions.

I am very glad indeed to enlighten Dr. Vaughan as to the occurrence of malignancy in uncivilized nations. Note the cancers on the arms and thighs produced by the Hottentot and the Chinese in carrying these little charcoal baskets around with them, and other instances of cancer in the cheek and in the mouth produced by constant irritation from chewing nuts. They are not civilized, and do have cancers.

I eluded to the fact that we do not understand the immediate causes of cancers. There are theories galore—just as many theories concerning the etiology of cancer as there used to be remedies applying to diabetes. But these predisposing causes that Dr. Teeter alluded to are certainly things that we do know about. We know that each of these irritations—moles, warts, etc., do produce cancer, and I don't think it is too great a burden for the physician to assume the responsibility for these conditions, for it is only as we consider these little irritations, such as moles, pimples and warts, that we are ever going to get anywhere in the prevention of cancer. We must therefore consider it our duty to look upon each of these moles, pimples and warts as a potential cancer. We can discharge our duty with no smaller effort than that.

MENSTRUATION FROM A NEW VIEW- POINT*

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The preceding theories of menstruation adhere more or less closely to the known and hypothetical changes which take place in the uterus and ovaries. One writer states that it may provide a rich pabulum to nourish the embryo.

This article presents the suggestion that menstruation may be a function established to provide blood albumen as support and possible nourishment for an ovum during the predecidual period.

Observations made on the life cycles of many disease-bearing insects have revealed the fact that ova are never stationary. Some degree of rotation seems to be a biological need. Take for example, mosquitoes. The anopheles selects vegetable matter in a watery incubator. The culex mosquito places her eggs in the form of a raft, while the anopheles places hers in designs referred to as floats. The yellow fever mosquito "lays eggs singly in small irregular groups some distance above the water. They are laid in from one to seven days after the female has fed upon blood" and usually after successive blood meals.

Insects seem to show a selective foresight in placing their ova. This is shown by the positions selected for the development of their fertilized ova. They prefer quiet waters, grass blades, water lilies, pieces of stick, rocks, threads, hairs, the under side of leaves, etc. The ova of frogs are laid singly or in small clusters, while toads lay them as long, unbroken strings and in each case they maintain this original design until such time as their development reaches a stage when the individual embryo can exist independently. The ova of many of our disease-bearing insects are deposited in masses. Many fish ova are deposited in the water and are fertilized there. When the ova are discharged in masses they are held together by a glue-like substance to some support. Take for example the head louse; she deposits her egg on a hair or thread and cements it there.

The study of chick embryology shows that the

eggs in the incubator must be rotated twice daily for a certain number of days in order to prevent deformities. All setting hens do the same thing for the eggs in their nests. It is only when the fertilized hen's egg is placed in proper conditions, and not till then, that segmentation begins.

The shape of all ova is such that a rotary motion may take place with a minimum of jar. When it comes to the perpetuation of a species, nature is extravagant in the extreme—she does nothing useless or purposeless.

Many insects protect their eggs with a gelatinous substance. It is known that the ovum of many animals becomes surrounded by a gelatinous covering. In rabbits this envelope becomes enormously thick about the blastodermic vesicle and this is the stage when the human embryo is supposed to enter the uterus.

The few instances cited suggest, first, that ova are generally protected or supported by some kind of an adhesive or glue-like substance, and, second, that a limited amount of movement is essential to prevent deformities.

Perhaps you are asking how this has anything to do with menstruation. In textbooks the term implantation is used to describe the manner of the embryo's attachment to the uterine mucosa. One textbook goes so far as to say, "That the human embryo penetrates the mucosa as would a parasite." Let us suppose that a fertilized ovum is discharged from the fallopian tube into the uterus, it is nothing more than reasonable to conclude that the menstrual function had some share in preparing for its reception.

Menstrual blood, we know, differs from blood from other source in its normal noncoagulability. Why this is so no one has as yet satisfactorily explained. Something may have been added, something may have been held back. In the hours while the decidua are developing could anything support, protect or permit motion of the ovum better than blood albumen? The albuminous cradle of the chick may have its counterpart in the human provided by blood albumen during the first hours of intrauterine life.

The position of the human subject is such that special provision needs to be made for the protection of the ovum during the period when its existence, purely from a mechanical standpoint, is precarious. If this theory has any basis of fact in it one can readily see that any deviation from normal blood (such as is found in syphilis) would have a profound influence on the developing ovum.

*Read before the Fifty-first Annual Meeting of the Florida Medical Association, held at Orlando, May 13, 1924.

By way of a summary let us define menstruation as a function established to meet the biological requirements of fertilized ova. This theory was first presented in an article entitled "A New Theory of Menstruation," published in the *New York Medical Journal* November 7, 1923.

BIBLIOGRAPHY

- American Textbook of Physiology.
- Barber and Copenhaver—Cerebral Control of Uterus. *Exp. Biol. Med.*, 1916, 13, 156.
- Barry, D. T.—Uterus, contractions and ovarian extract. *Jour. Phys.*, 1915, 50, 259.
- Brubaker, A. P.—Physiology.
- Burton Opitz—Viscosity of Blood. *Amer. Jour. Phys.*, 35, 951, 1914.
- Ibid.—*Arch. Phys.*, 82, 447, 1900.
- Ibid.—*Jour. Phys.*, 32, 8, 1904.
- Chick—Viscosity of Blood Proteins Solutions, *Biochem. Jour.*, 8, 261, 1904.
- Cushny—Movements. *Jour. Phys.*, 1906, 35.
- Da Costa—Clinical Hematology.
- Fox—Coagulation of Blood. *Lancet*, 1908, p. 99.
- Geddes and Thompson—Sex.
- Gutland and Goodall—The Blood, a Guide to Its Examination and to the Diagnosis and Treatment of Its Diseases. 1912.
- Hammond and Marshall—Correlation Between Uterus, Ovaries and Mammary Gland. *Proc. Roy. Soc.*, 1914, 87, 422.
- Heape—Monkeys. *Brit. Med. Jour.*, December 24, 1898.
- Howell, W. H.—Physiology.
- Keith, Arthur—Human Embryology and Morphology.
- Keibel and Mall—Human Embryology. Vol. 2.
- King, J.—Cardiac Vascular and Temperature Variations on Women. *Amer. Jour. Phys.*, 1914, 34, 203.
- King, Jessie L.—A Study of the Anticoagulating Substances in the Mucous Membrane of the Uterus. *Amer. Jour. Phys.*, October, 1921.
- Loeb, L.—Production of Deciduomata. *Arch. f. Entwick. D.*, 1908, 27.
- Lillie, F. R.—The Development of the Chick.
- Loeb, L.—Correlation Between Cyclic Changes in Uterus and Ovaries. *Biol. Bull.*, 1914, 37.
- Luciana, Luigi—Human Physiology.
- Marshall and Runciman—Ovary and Oestrus. *Jour. Phys.*, 1914, 49, 177.
- Marshall and Jolly—Dog. *Phil. Trans., Roy. Soc.*, 1905, 198, 90. Menstruation and Ovulation in Monkeys and in the Human Female.
- Minet, C. S.—A Laboratory Textbook of Embryology.
- Ott and Scott—Action of Glandular Extract on Uterine Contractions. *Jour. Exp. Med.*, 1909, 14, 326, 1909, 11, 326.
- Patten and Cragg—A Textbook of Medical Entomology. Proceedings of the Class formed to study Entomology, Washington, D. C., 1918.
- Prentiss, Chas. W.—Embryology.
- Retger—Mechanical Factors in Clotting. *Ibid.*, 24, 429, 1909.
- Riley and Johannsen—Handbook of Entomology.
- Stewart, G. N.—Physiology.
- Wilson, E. B.—The Cell in Development and Inheritance.
- Zak—Relation of Plasma Lipoids to Coagulation. *Archiv. of Exp. Path. in Pharmacy*, 79, 274, 1912.

DISCUSSION

Dr. W. M. Rowlett, Tampa:

This is, indeed, a very interesting paper that Dr. Young has produced, because it is original, and I hope she will continue her research along this line, which will, no doubt, throw very val-

uable information upon the phenomenon of menstruation. I am sorry that she made it so brief. I wish that she would have gone more into detail as to the cycle of menstruation.

I take it for granted that you all agree, and that she does, that we consider menstruation as an endocrine phenomenon. She, no doubt, figures that you have carried the picture of menstruation closely allied with the maturing of the Graafian follicles, of the meconium, and the preparation of the decidua for the reception of the fertilized ova. I can understand the theory of the necessity for blood albuminate, and that the sponge tissue that makes up the decidua could possibly absorb a sufficient amount of blood albuminate in which to nourish the fertilized ova.

I am sorry that she did not devote more time to the mosquito and the other low life animals or insects. It is said that the female mosquito, in order to properly nourish its fertilized ova, must feed upon blood. It is possible that the mosquito could help her in solving this important question.

I would like to ask Dr. Young, while we are on the question of sex, if she has ever given any thought as to what takes place between the male and the female spider in the fertilization of the female ova. It is a fact that she turns upon her male spouse and devours him. The thing that I should like to know is whether the male contains some necessary food value that is necessary for the development of this fertilized ova.

We have a family of marsupial animals, or animals belonging to the marsupial family, which might discourage Dr. Young's theory inasmuch as we know that the female does not have a uterus—that is not a typical uterus. Belonging to that family, as you know, are the kangaroo and the opossum. The female has a tube connecting with her genitals, branching off and leading to each of the mammary glands. After the ovum has become fertilized it travels down this little tube and finally lodges in one of these mammary glands, which is protected by a so-called pouch, and there develops. It enters the gland and develops, externally, you understand, being protected by this pouch. It is a question to me whether this aids her or discourages her in the question of the necessity of blood albuminates.

Dr. John B. Black, Jacksonville:

Novak's work, printed in 1922, perhaps gives as much information on research work of this type as can be obtained at present date. It is practically acknowledged by all that the ovary plays a conspicuous part in the etiology of men-

struation. The mucus membrane of the uterus is the immediate source of the menstrual blood. What this blood does in line of preparation for reception of an ovum is a disputed point.

The important constituents of the ovary from a functional viewpoint are: 1. The follicle; 2. Corporalates; 2. The interstitial cells.

The corpus luteum theory of Fraenkel perhaps stands out foremost as the underlying cause of menstruation. He believes that the corpus luteum must be looked upon as ductless gland, which is renewed every four weeks during the sexual life of a human being, and at different periods in various lower animals, its function is to maintain the nutrition of the uterus from puberty to menopause and to prepare its mucosa for the reception and maintenance of the ovum. If the latter be fertilized the corpus luteum is important in the fixation of the ovum and its nutrition during the early months of pregnancy.

Marshall does not accept the findings of Fraenkel, although he believes that the ovary provides an internal secretion. He considers that this is elaborated by the follicular epithelial cells or the stroma rather than by corpus luteum. This secretion circulates in the blood and produces a series of changes, which at least assist phenomena of heat or of menstruation. After ovulation, which occurs normally in lower animals during estrus, the corpus luteum is formed and this organ elaborates a further secretion, the presence of which is essential for the change taking place during the attachment and development of the embryo in the first stage of pregnancy.

The most extensive experimental investigations have been conducted by Loeb, and carried out principally on guinea pigs. He believes that the uterine cycle in these animals can be divided into two periods. The first, which comprises the changes associated with heat and ovulation, he does not believe that is due to the activities of corpus luteum, but is actually inhibited by it. On the other hand the second stage, characterized by disidual reaction and by phenomena of secretion in the uterine gland, depends upon the presence of corpus luteum.

Essential as the ovary is to menstruation, it must not be forgotten that the latter function is subject to profound influence by many other endocrine glands. For the present assuming that the ovary is primarily responsible for the menstrual process, there are other factors linked in the menstrual chain which desire explanation.

How does ovarian hormone bring about the hyperemia of menstruation? It either acts directly on the blood vessel walls or it produces its effect through the vasomotor nerves.

Physiologists are prone to speak of any relay station in the spinal cord, or elsewhere as a "center," and from this point of view some have spoken of a so-called menstrual center, usually described as being located in the lumbar portion of the spinal cord. While there seems to be no definite knowledge concerning such a center, there is no question that the vasomotor nerves of the pelvis plays an important role in the production of the hyperemia which is perhaps the most conspicuous feature of menstruation.

The vasomotor nerves are the offshoot of the sympathetic and through the rami-communicaantes are linked up with cerebrous spinal system and even with psychic centers in the brain. No consideration in the physiology of menstruation can be complete without the assumption that a local factor in the endometrium, which in some way increase the permeability of the blood vessel walls to the blood elements of menstruation. According to Samson it is especially the small veins of the endometrium which give passage to these elements. Just what the factor is, how it is formed, and how it acts, has not been determined. This question is closely bound up with the consideration of why the menstrual blood is noncoagulable. Whether the same local factor is responsible for the noncoagulability of the menstrual blood as well as for its passage through the vessel wall, and whether the substance is a hormone, or an enzyme, are questions which cannot as yet be answered.

In the final analysis, however, it seems probable that the formation of the substance in the endometrium is dependent upon the ovarian function. Schickele's work indicates, the substance is actually formed by the ovaries and given off in the endometrium.

Dr. William R. Warren, Key West:

If the phenomenon of menstruation is to be considered as the preparation of a pabulum for the ovum, will Doctor Young explain the phenomenon in the woman who does not menstruate or has never menstruated and yet becomes pregnant and bears children?

Dr. Anne Young (closing):

This theory may be nothing more than a little bit of medical imagination that has gone down on

paper. It is interesting and that may be all that there is to it. I have thought of the possibility of a woman who never menstruated becoming pregnant. If albumen is a necessity for the development of the ovum it is conceivable that a very scant period might precede which would provide sufficient albumen and yet not be accompanied by a visible discharge.

The case of the marsupials in no way detracts from the theory. Their young are born when extremely small and imperfect and are placed in the pouch for further development.

The only lower animals having a bloody discharge during the oestrus are the monkey, which has a fairly free discharge; the dog has a slight discharge and the horse about a thimblefull during the preoestrus. All other animals have a mucus discharge at that time.

THE TREATMENT OF SEPTICEMIA AND LOCAL INFECTIONS BY INTRAVEN- OUS INJECTIONS OF THE ACRI- DINE COMPOUND, NEUTRAL ACRIFLAVINE*

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In the treatment of sepsis of any form we are naturally inclined to welcome any sort of treatment that will restore our patients to a normal condition in the shortest possible period of time. Those of us who have had experience with these patients can readily draw a mental picture of the too often fatal end. On the other hand, identical clinical pictures that clear up like magic under any form of intelligent treatment naturally create a very pleasing contrast.

My attention was first called to the "Flavine" group early in 1919 while on a visit to The Touro Infirmary and Charity Hospital, New Orleans, La., by Dr. H. W. E. Walther, a noted urologist. Dr. Walther was using acriflavine in 1:1000 solution for lavaging pyelonephritic kidneys. Some of these were sequels to the 1918 epidemic of influenza. Those coming under my observation were of the pneumococcus, staphylococcus, and colon bacilli types of infection. At that time

the Doctor was very enthusiastic regarding this method of treatment. He was also treating urethral and bladder infections with proflavine with good results.

In reviewing the literature I found my first information on which to build my hopes in Oxford Loose-Leaf Surgery by Browning.¹ He says "flavine" antiseptics are the most powerful antiseptics so far known for both staphylococcus and the colon bacilli in the presence of serum; and as compared with other substances, they show a similar high-grade potency towards other pathogenic organisms such as streptococci and the anaerobes. Their action is preeminently antiseptic; *i. e.*, very great dilutions, such as 1:100,000, inhibit the activity of bacteria and ultimately kill them; at the same time, concentrations as high as 1:1000 do not damage the reparative or protective mechanisms of the body tissues. These substances are comparatively unirritating to delicate epithelial membranes.

"Acriflavine and proflavine are equal in antiseptic power; the latter has been found to possess some hemostatic action. In view of the fact the activity of these agents is not annulled by the serous exudate of wounds, but rather enhanced thereby, the indication is to avoid an excess of watery fluid and renewal of the antiseptic. A suitable method of treating local wounds is by gauze packing saturated with 1:1000 solution in normal saline. Several ounces of 1:1000 may be safely injected subcutaneously or left free in the abdominal cavity."

Mark, H., and Olesker, L.² have used massive doses of the acridine compound, neutral acriflavine, intravenously in endocarditis, otitis media, and puerperal fever, using 30 to 40 cc. of a 0.5% solution intravenously with remarkable therapeutic effect. In their paper they report other German authorities getting results in influenza, acute arthritis, in septic disease processes with variable success.

Davis,³ of Johns-Hopkins, made a study of the antiseptic properties and renal excretion of 204 aniline dyes. "With only two of these, however (proflavine and acriflavine), was it possible to demonstrate the secretion of antiseptic urine following intravenous medication." Together with Beck⁴ he concluded: "Proflavine and acriflavine, administered by mouth in 0.1 gram and even 0.05 gram dosage, to normal individuals is secreted in the urine sufficient concentration to render the latter an unfit culture medium for the colon

*Read before the Fifty-first Annual Meeting of the Florida Medical Association, held at Orlando, May 13, 14, 1924.

bacillus and staphylococcus, provided the reaction of the urine is alkaline."

Levy⁵ concludes that this drug should be given a trial in a wide variety of infections after getting so brilliant a result in such a malignant type of Ludwig's angina.

Case 1. Acute fulminating appendicitis. A. L. M., a man, admitted July 1, 1922, after having been brought in some thirty miles over a rough road with acute pain in abdomen of six hours' duration, was left alone until next morning on account of my absence from city. A diagnosis of acute appendicitis was made and abdomen immediately opened. I found free pus in abdomen and a worm-eaten type of appendix. Temperature at time of operation 104 Fhr. Appendix was removed and wound closed and a small cigarette drain placed through a stab wound. The abdomen was filled with 1:1000 solution of acriflavine before closing. In 24 hours temperature was normal and a rapid recovery resulted without discharge. Patient left hospital on the tenth day.

Case 2. Staphylococcus septicemia, and extensive pelvic cellulitis following abortion and retained secundines.

Mrs. M., age 36, multipara, admitted March 3, 1923. She had been sick for three weeks following curretage for retained secundines believed to be caused by abortion, self-induced. Her temperature had been ranging from 102 to 105, with daily and twice daily chills. Temperature 105 when admitted, hemoglobin 20%, leucocyte count 40,000, abdomen distended and extreme tenderness, uterus fixed and palpable mass in pelvis, extreme emaciation and toxic condition, 30 cc. containing 0.25 gram neutral acriflavine, pro injections, was administered intravenously. The temperature next morning was 101. No more chills. The dose was repeated in twelve hours, and again in twelve hours. The following morning, March 5th, temperature was normal, and abdominal tenderness and pelvic mass rapidly subsiding. The same dose was administered that morning and the following morning. Temperature remained normal from the second morning and convalescence was unmolested. Patient left the hospital in three weeks, and after two months was able to have the diseased appendages and appendix removed.

Case 3. General septicemia due to colon bacillus, during puerperal period.

Mrs. W. B. A., mother of five children, always healthy; meddlesome examination of negro mid-

wife before delivery. On June 17, 1923, a normal delivery. Three days after delivery she had a chill, followed in six hours with another chill, a lapse of 12 hours and another chill with a temperature of 105, pulse 140. Blood examination; leucocytes 20,000, reds 4,800,000, poly's 80%. Blood culture revealed colon bacillus. Twenty-five cc. neutral acriflavine repeated in twelve hours, after which temperature dropped to normal with a rise to 101 in six hours, when another injection was made. The following day temperature was normal and continued normal. On the fourth day a culture taken from the blood was sterile. The rapidity of restoration to normal health was almost unbelievable.

Case 4. R. L. M., a man, age 55, colon bacillus infection of blood stream following urethritis.

Two weeks following a neisserian urethritis this man had a chill, followed by a temperature of 103, temperature dropped to 101 in the course of 12 hours, to be followed by another chill at the expiration of 24 hours. At the end of three days an examination of the blood revealed a colon bacillus infection. Intravenous injection of $\frac{1}{4}$ gm. in 25 cc. normal saline was administered, after which temperature rapidly resumed normal. A second injection was administered 24 hours later. No further treatment was given. The discharge from urethra also stopped. In a few days patient was well.

Case 5. H. S., a male, age 56, received an accidental cut on right hand. Twenty-four hours later he had a chill, followed shortly with a temperature of 104 2/5; arm intensely swollen, with red lines running from hand to shoulder. No blood culture was made, but an intravenous injection of 25 cc. 1% neutral acriflavine, pro injections, was given. Next morning temperature was normal, arm much reduced in size, red lines having disappeared. He thought he was well and went to work. After three days arm began to swell again, and infection began to localize over thumb. An anaesthetic was administered and wound laid open. Two more injections were given at 24-hour intervals, following which he made a rapid recovery.

Case 5. Pyelitis due to colon bacillus and staphylococcus aureus; renal calculi; sterilization of urine.

Male, age 54, with a history of severe pain in right side for past month. These attacks of renal colic were followed by hematuria. X-ray showed stone in right kidney. Urine examination re-

vealed pus, blood, colon bacillus and staphylococcus aureus. Patient was having severe chills, and a temperature ranging from 103 to 105, and very septic; in fact patient was in a semi-comatose state. After the administration of 30 cc. of 1% solution neutral acriflavine intravenously the temperature began to fall at once; patient became conscious and improved steadily. The yellow discoloration of the skin remained for one week after the last dye was administered, proving a faulty elimination. After five days' treatment the urine was sterile, and he was apparently cured of the septicemia. Two weeks later he gradually developed anuria and succumbed from uremia. It is possible that multiple repeated intravenous injections would be advisable in such cases, but they would have to be given with care, as we do not know the limit of safety for repeated injections.

The cases just reported were very virulent and seemingly desperate, and the results, apparently, miraculous. I have used the same treatment in many other cases of much milder types of infection with good results. In two cases of streptococcus hemolyticus I derived no apparent benefit. In empyema following pneumonia and pleurisy the duration was much shortened, and the discharge stopped within ten to fourteen days after daily irrigation with a 1:1000 solution; previously in my experience, drainage kept up several weeks. Equally laudable claims have recently been made in literature for mercurochrome, gentian violet, phylacogens, bacterins, and various serums administered both intravenously and subcutaneously. Personally I have been disappointed with serums and phylacogens in the majority of cases. Yet, at times, I have attributed marvelous results to the use of mixed infection phylacogen in desperate and apparently hopeless cases. My cases treated by the flavine dye may have been providential, but so many favorable results naturally remove a great deal of our skepticism.

To secure satisfactory results, always use freshly made solutions prepared from the dry powder in freshly distilled water after making a normal saline solution.

CONCLUSIONS

The ideal way of combating infections, both general and local, would be by free drainage, proper surgery, elimination, supportive measures, and the intravenous injections of harmless chemicals.

In acriflavine, pro injections, we have a val-

uable agent with which to sterilize the blood stream in many infections.

The results so far obtained are sufficient to give us much encouragement and optimism for the future.

BIBLIOGRAPHY

- ¹Browning, C. H.—Oxford Loose-Leaf Surgery, Vol. I, p. 903.
- ²Mark, H., and Olesker, L.—Deutsch. Med. Wochens., Jan. 5, 1923. No. 1, p. 17.
- ³Davis, E. G.—Amer. Jour. Med. Sciences, 1921, 161-251.
- ⁴Davis, E. G., and Beck, G. H.—Journ. Urol., March, 1921, 5:215.
- ⁵Levy, David H.—N. Y. Med. Journ. and Med. Record, Jan. 3, 1923. Reprint.

DISCUSSION

Dr. J. V. Freeman, Jacksonville:

There is just one point that might be brought out in reference to the very valuable paper of Dr. Davis: That is, he reported the lack of results from two cases due to streptococcus hemolyticus. I have it, on Dr. Barker's authority, that mercurochrome 2% is a specific for that particular infection.

Dr. J. C. Davis (closing):

There is nothing further to add, except that we might say that in using this preparation we should not use the proflavine for intravenous injection on account of the sulphuric acid that it contains. Also, we should not use acriflavine on account of the hydrochloric acid radical. After eliminating the sulphuric acid radical from proflavine we get acriflavine which is still unsatisfactory for intravenous injection because it contains an element of hydrochloric acid. After this is neutralized we get the neutral acriflavine, and it is the latter preparation used in intravenous injections.

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The book will be mailed, upon request—postpaid and free of charge—by the Charles B. Knox Gelatine Company, Johnstown, N. Y., to any physician or dietician who requests it.

ASSOCIATION NEWS

President Vinson has called a conjoined meeting of the Executive, Legislative, and Scientific Committees, and all the district Councillors, on March 26th, at Dayton.

The purpose of this meeting is to promote efficient functioning and coordination of the committees and councillors, also to study the medical conditions in the state, and discuss the ways and means of meeting them. This will afford the committees an opportunity to make fuller and more intelligent reports at the next state meeting.

In calling this preconvention meeting of committees and councillors, President Vinson has taken a step in making the next meeting the most successful we have had, and ultimately in the best interest of the profession in the state. It is to be hoped that every committee member and councillor will attend.

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ANNOUNCEMENT OF SCIENTIFIC PROGRAM COMMITTEE

The Committee on Scientific Work of the Florida Medical Association wish to make the following announcement relative to the program for the next annual meeting.

Twenty-three papers will constitute the Scientific Program. Those desiring to read papers will communicate with a member of the committee, giving title and abstract of paper. All applications should be in the hands of the committee by March 15th. It is the desire of the committee to have all parts of the state represented and for the papers to cover as many different subjects as possible.

Attention is invited to Chapter 3, Section 4 of the Constitution, which was amended to read as follows at our last annual meeting:

"No address or paper before the Association, except those of the President and orators, shall occupy more than twenty minutes in its delivery, and no member shall speak longer than five minutes, nor more than once on any subject. Provided, that all papers be read before the component County Medical Society of which the essayist is a member."

Amended to read: "No address or paper before the Association, except those of the President and orators, shall occupy more than fifteen minutes in its delivery, and no member shall speak longer than five minutes, nor more than once on any one subject."

Members are urged to forward applications for place on program as soon as possible, to any member of the Scientific Committee, preferably to that member from his section of the state.

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ST. PETERSBURG

1925

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THE ST. PETERSBURG PROGRAM

The Committee on Scientific Program has sent an announcement to the membership of the State Medical Association stating the principles on which the program for the St. Petersburg meeting will be built. The committee invites applications for places on the program, which applications are to be passed on at a final meeting of the committee to be held March 26th.

The program this year, according to this announcement, is to consist of twenty-three papers besides the paper from the invited guest. This with the discussions will occupy the two days the Association is in session.

It is to be hoped that the Committee will introduce an innovation this year by arranging an informal program for the evening before the Association convenes. Many physicians arrive at the meeting place the evening before the opening, and have nowhere to go. The annual meeting of the railroad surgeons is held the day previous to the State Medical Association. This will cause many physicians to be in the city, and some kind of a medical program should be arranged.

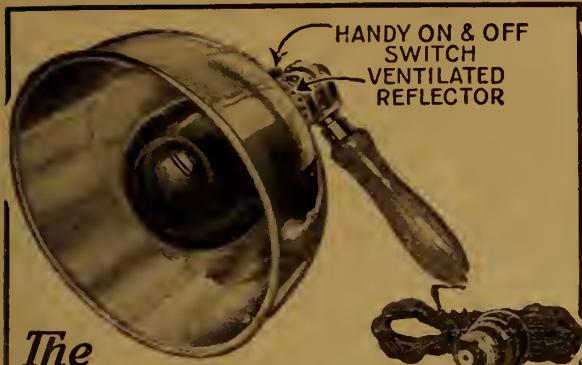
This is offered merely as a suggestion which the Committee can follow if feasible, but year after year we have felt the evening before the formal convening should be utilized.

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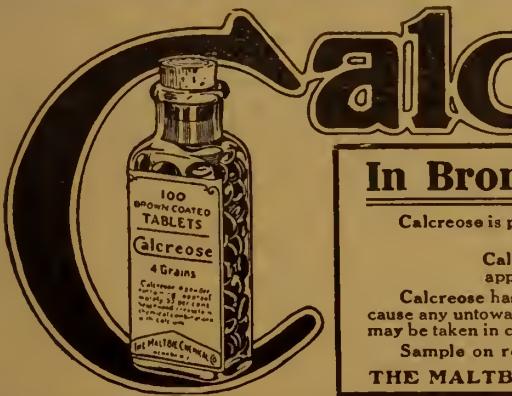
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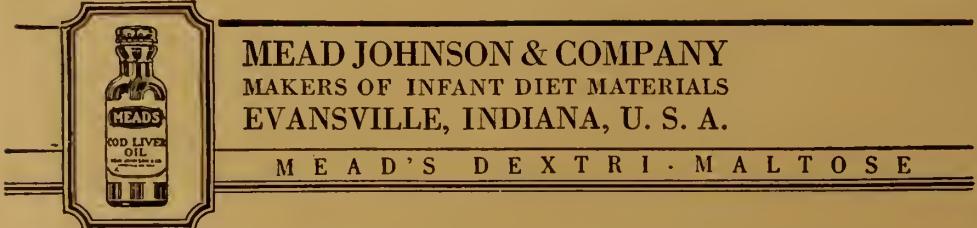
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THE JOURNAL OF THE FLORIDA MEDICAL ASSOCIATION

PUBLISHED MONTHLY

Volume XI

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Number 7

ORIGINAL ARTICLES

REGIONAL AND BLOCK ANESTHESIA*

ALEX M. C. JOBSON, B. S., M. D.,

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Tampa, Florida.

On reviewing the literature published on regional anesthesia, one is greatly impressed with the advancement made in this line, since Koller accidentally discovered anesthesia could be produced by cocaine being instilled in the eye. Working itself up from the reduced oculist field, regional anesthesia has conquered step by step to its present position as one of the methods of choice in general surgery.

Let us consider, first, the history of regional anesthesia succinctly. It is generally conceded that it had its beginning in 1884 when Koller produced anesthesia in the eye by using a 2 per cent solution of cocaine in the conjunctival sack. This produced quite a sensation at this time and as a result several men began to experiment with the anesthetic properties of cocaine in other branches of surgery. Their results were disastrous, due to their lack of proper study of the pharmaceutical properties of the drug.

Reclus and Schleich endeavored to overcome the past failures by reducing the strength of the drug, but their anesthesia was of little value. They endeavored to improve their results by adding adrenalin to the solution. This aided some by increasing the grade of anesthesia and lessening its toxicity by slowing up absorption, but even then it was not free from dangers.

The scientific world then began a search for a drug which could be used as a regional anesthetic for all practical purposes and be free from irritation and toxicity. Many drugs were proposed, but all failed to give the desired result.

It was not until 1905 when Einhorn brought forth novocain or procain which was proven to be nonirritating to tissues and seven times less toxic than cocaine, and also could be sterilized by a limited amount of boiling. Here again it was found that the adding of adrenalin solution,

1:1000, would intensify its action both as to anesthetic properties and duration of anesthesia, as well as lessen its absorption by contracting the smaller vessels in the infiltrated area, thereby producing a more bloodless field in which to work. Up to the present day we have found no drug which is superior to novocain for local and regional anesthesia.

General anesthesia by the intraspinal method was first used by Le Filliatre, who made his injection as low as the fifth lumbar vertebra with the idea that the pressure would cause it to flow up toward the brain, thereby giving him general anesthesia.

The caudal or sacral block was first produced by Cathelin in 1901, but it was not perfected until Laewen in 1910 popularized it. Still later Davis used this method in 1913, but he varied his technique somewhat by making his approach by the postsacral foramina.

The manner in which regional anesthesia was first produced in general surgery was by intra-dermal infiltration that caused a large amount of edema, swelling and distortion of anatomy. To overcome this a regional method was brought forth where there was an extensive infiltration of the line of incision, this was followed by further injections from time to time as the operation proceeded.

Following this method, Hockenbruch, and still later Braim, practiced a technique of circuminjection of the operative field whereby it was completely isolated from the rest of the body.

It was not until 1911, by Laewen, that the first true nerve blocking was done. He injected the spinal nerves as they made their exit from the intervertebral foramina. This he called paravertebral anesthesia, and so it is still known.

The types of regional and block anesthesia as practiced today are four in number, namely:

1. Field block, which consists of blocking the nerve terminals around or away from the operative field.
2. Paravertebral or Dorsal block, this consists of blocking the nerves at any point from the skull or spine foramina to the areas they supply.
3. Extradural or Sacral block, consists of

*Read before the Fifty-first Annual Meeting of the Florida Medical Association, held at Orlando, May 13, 14, 1924.

blocking the nerve roots within the spine but outside of the duramater.

4. Intradural or Spinal, consists of blocking the nerve roots within the duramater.

The combination of two or more of these methods make it possible to perform, painlessly, practically all major surgical procedures.

The surgeon who wishes to give regional anesthesia should have a thorough knowledge of anatomy. He must be able to visualize at all times the deep structures that lay beneath the skin and their relationship to external landmarks which he must take with extreme care and accuracy, for it is on these that the success or failure of this method depends. His sense of touch must be one that will enable him to tell the different structures his needlepoint passes through at the same time he visualizes them in their relationship to their surrounding tissues.

His operative technique he will have almost entirely to change; speed will have to be sacrificed for gentleness and ease of manipulation of tissues. For the same reason the length of his incisions must be increased. His dissections must be clean and made with the knife when possible, thus getting away from blunt dissections, tearing apart and the useless handling of tissues, as it is from this that much of our so-called referred pain comes. He must be calm, patient and content regardless of the small irritating incidents that may, or may not, come up during a major surgical procedure, for the patient's psychology varies in direct ratio to that of the operator, and for the technique to be a success he must have the cooperation of the patient.

Let us now direct our attention to patients who are about to have this type of anesthesia. It has been found that this method is least popular in localities where it is new, as they have to be educated up to it. In others, where it has been in practice, they even expect it or ask for it. However, it is not the choice of the patient but the choice of the surgeon, as he is the one to decide the type of operation to be performed. The patient should be told the advantages of the method, wherein it surpasses the inhalation narcosis, etc. He should know when the anesthesia begins and what kind of sensations he might expect. For example, he should be told that when the anesthesia sets in that he might expect a numbness and a sensation of weight in the part that has been anesthetized. He should know that he might have sensations of slight pulls and

pressure from time to time as the operation progresses, but that this will not be a pain.

The nurses in a hospital which is using this type of anesthesia must aid in its perfection by being taught how to educate the patients on which it is to be used, and also those who are not to use this technique. For it is primarily on education of the public on which the popularity of the method depends. The nurse should be able to make it clear to them what they might expect on going to the operating room, as it is too late to enlighten them after they arrive there and the patients are in no state of mind to appreciate what is told them. Then again, the nurse should know how to direct the patient's mind while the operation is in progress. Some require to be talked to, while others of a different temperament want to be left alone.

As a general rule, the patient should not be told when the operation begins; and such questions, as to how does he feel or is there any pain, are absolutely barred. If there is any pain, he will let you know; and besides, his facial expression is quite a good guide. It might be well to encourage him from time to time, but never tell him that you will be through in a moment or that there is just a little more, when you are in the midst of a lengthy procedure, for he will be quick to notice the deception and he will lose his confidence in all the other things you may have told him. It can be easily seen that the handling of a patient while he is on the operating table is a task of delicacy and precision. Here is where many successful anesthetists completely fail, and the method unjustly gets the blame. The state of mind of the patient before he goes to the operating table should be one of a drowsy, tranquil feeling, and to bring about this condition we advise the previous injection of morphine sulphate gr. 1/6 and scopolamine gr. 1/300. The morphine produces a specific central analgesic action, a depressant effect on the respiratory and associated medullary centers, a descending depressant action on the entire central nervous system and a constipating effect resulting from a combination of central and local actions. Scopolamine resembles atropine in its influence on the nerve endings, but differs from it in having a sedative effect instead of a stimulating effect on the brain. The above dosage will give us the condition we want without producing the so-called "twilight sleep" which we do not want. Smaller doses than this have more of a tendency to irritate than quiet our patient.

Patients as a whole can be divided into three general classes. Their individual idiosyncrasies are well marked and depend on many things, all of which recognize the emotional element as their chief cause. One class will have a nervous excitement of so great a magnitude that it will prohibit even the simplest steps in a surgical procedure. Others, while they feel no pain, just the consciousness that the operation is in progress will be sufficient for the lightest touch to be interpreted by the brain as pain, and it is to this type that a few whiffs of gas or ether ought to be given to blunt his consciousness and calm him so that the operator may proceed undisturbed. Still others agree readily to regional anesthesia, or even ask for it, but as soon as they reach the operating room either beg to be given inhalation narcosis or faint.

It might be well at this time to express Dr. Crile's opinion on local anesthetics versus inhalation narcosis. "Local anesthetics protect the brain from local operative injury but they do not protect the brain against destructive psychic strain. Inhalation anesthetics exclude the psychic stimulation from the brain cells but do not exclude the operative stimulation."

TECHNIQUE OF REGIONAL ANESTHESIA

The proper technique of regional anesthesia requires a special type of syringe and special needles. I, personally, prefer the Labat regional outfit which consists of a special 10 c.c. syringe with an eccentric tip and bayonet lock, a 2 c.c. Luer all-glass syringe, a set of fine needles of different dimensions; to this should be added three graduate glass measures and two glass cups; a spare syringe and set of needles should always be at hand. The care taken of the needles and syringe is very important, the needles especially require attention, so that they will always be smooth and sharp, for nothing is more displeasing than to attempt to introduce a needle with a hooked or bent point, and then when such a needle is introduced it tears the tissues on its withdrawal, thereby leaving a puncture which will be more or less sensitive after all the others have become normal.

The anesthetic of choice is neocain, without suparin, coming in powder form in sterile containers, the solution being made at the time of injection with sterile normal salt. The adrenalin is added last, using 20 mins. to 100 c.c. regardless of the percentage of the other drug. The neocain solution varies in strength from 0.5 per cent to 2.0 per cent, depending entirely on the

locality and surgical procedure which is to be performed. There must be an accurate account of the amount of solution which is injected in a patient because, while the neocain is to all practical purposes free from toxicity, it is still possible to cause alarming symptoms in some instances with an over-amount of the drug. The danger lies mostly with beginners, for they, in their zeal to produce a perfect anesthesia, have a tendency to use too much of the anesthetic solution. In my opinion a fresh solution is at all times preferable to a stock solution. There are a few atmospheric changes that take place and these may, or may not, cause trouble. All stained or colored solutions should be discarded.

There is no pre- or post-operative treatment for one who is to take regional anesthesia. He is allowed to have a light breakfast on the morning of his operation and is given a cup of black coffee as soon as he reaches his room and his normal diet kept up, that is providing, of course, that it does not conflict with the surgical procedure he has undergone.

In general surgery the lack of experience of the surgeon and anesthetist is most likely to reduce the value of regional anesthesia. The nature of the operation, the difficulties encountered in the carrying out of it in certain procedures, the greater demands for major operations imposed on the method, the necessity for the use of refined surgical technique, all tend to overtax the ability and knowledge of the average man. It is even necessary for the expert to keep on practicing daily so as to improve his technique and increase his experience.

The use of regional anesthesia whenever possible is the only way of developing the method, and assuring success at all times when failure is least desired. The injection of weak patients once in a while is far from being sufficient to train a man in regional anesthesia, that is, to offer him the opportunities of mastering the difficulties of technique for the injection of individual cases. The occasional reaction of a strong patient to over-dosage is a lesson which the operator is glad to call to memory when called to carry out the same procedure on a poor surgical risk. Up to this time the profession cannot estimate the value of regional anesthesia, since no effort has been made to promote its study and widespread use.

In different regions of the body the regional anesthesia is accomplished with varying degrees of success. For example, in abdominal opera-

tions it is very difficult and requires long practice. Here the intraspinal block is much more easily and quickly accomplished and gives a greater percentage of good anesthesias than the paravertebral block or the splanchnic analgesia. Again, as a rule, the injection of lean patients is always easier than the rest, as fat patients do not lend themselves with ease and so become better subjects for spinal anesthesia, with the exception of instances where the procedure in view is one wherein the regional is always good, field block, for example.

The advantages of regional anesthesia cannot be denied even by those most skeptical on the subject. It is not dangerous to life, complete muscular relaxation is realized, thereby facilitating the most delicate surgical procedures. In abdominal surgery you have a negative intra-abdominal pressure which is undeniably of great value. The central nervous system on which the vital functions of life depend is left intact. The brain is protected from local operative injury. The psychic stimulation of the brain cells is reduced to a minimum. The combination of these, as we see, must necessarily reduce the operative shock considerably. There is no post-operative nausea or vomiting, thus no distressing the patient and, at the same time, there is no additional strain on the sutures. Normal diet is not disturbed if the nature of the operation permits. The postoperative pain is not any more severe in surgical cases which have undergone regional anesthesia than in those of inhalation narcosis, although their mental condition is much more clear and the absence of the nausea and vomiting allows them to take a much more accurate account of themselves. Edema of the lungs, pulmonary congestion or postoperative pneumonia will not set in if the usual precautions are taken.

In minor surgery, regional anesthesia is practically imperative; and for all operations where the general condition of the patient, the nature of the disease, and the region of the lesion contraindicate inhalation narcosis.

In conclusion, let me say that the beginner cannot be expected to be successful with his first attempts; partial failures can be remedied by a first stage or short period of inhalation narcosis. There is no shame to have to use the combined method when it was intended to be regional anesthesia alone, for the judicious use of mixed anesthesia is much more preferable to inhalation narcosis alone, and the method should not be aban-

doned for this reason, but one should keep on trying until the technique is perfected to such an extent that total or partial failure becomes exceptional.

BIBLIOGRAPHY.

- Crile, I. W., and Lower, W. E.: Anoci. Association Philadelphia, Saunders, 1914, 108-121.
- Lebat, G.: L'Anesthésie Paravertébrale en Chirurgie Gastroïque et Intestinale, Paris, Legrand, 1920.
- Lebat, G.: Regional Anesthesia, Annals of Surgery, 1921.
- Lebat, G.: Regional Anesthesia, Philadelphia, Saunders.

DISCUSSION

Dr. J. S. Helms, Tampa:

I have come to the belief that general anesthesia as administered by the respiratory tract should be avoided where it is reasonably possible in surgery. This puts us up to the necessity of getting some substitute. We have for a long time used the method of infiltration of various drugs to accomplish this purpose. Recent developments in regional and block anesthesia have been in marked advance toward obtaining that alternate aim which we most desire.

I have found that some of the methods of anesthesia probably have not had the value which we have placed upon them, perhaps, in the past. Rather, on the other hand, I think it is better, perhaps, to have the patient in full possession of all his conscious faculties, and that he be controlled as much as possible by the psychic influence of the operator. I think it is very necessary for one who expects to do this work successfully to cultivate a certain sort of method for obtaining psychic control of the patients, because that is a very important factor.

I desire to express my appreciation for the paper, which is very instructive, and Dr. Jobson, I feel, is a competent speaker on the subject.

Dr. L. A. Peek, West Palm Beach:

When every surgeon is a competent anatomist, when all surgeons' helpers (both assistants and nurses) are trained psychologists, when the chemists have elaborated even a better regional anesthetic than novocain—then will local anesthesia come into possession of the whole field and the use of chloroform, ether and gas will be relegated to oblivion.

Are these dreams? If so, they are dreams that are coming true. While listening to the excellent paper of Dr. Jobson I was impressed with his description of what the surgeon ought to do and ought to be when using local anesthesia, and what manner of operation ought to be done with the use of local anesthesia. For he told the sur-

geon to be patient, kind and gentle, not only to the patient but also to his tissues. Now every surgeon at all times should be patient, kind and gentle and not handle the patient roughly, neither as to his mind nor as to his tissues, always remembering to use a sharp knife very carefully, to touch raw tissues as little as possible, both on account of possible infection and on account of traumatism.

Rough men who handle tissues and patients roughly should be eliminated from the ranks of surgeons. There is no surer method of reaching this desirable result than by the general use of local anesthesia. And let us not await the better anesthetic from the chemists before using this method. We can get almost perfect results now. If eventually we shall all use the method, why not now? I have great hopes, however, that the chemists will get something which, when injected subcutaneously, will have a special attraction for the nerves of sensation, such a predilection for them that it will anesthetize them completely and will not affect the other tissues deleteriously in any way. That is what we want and we will get it if we use what we have to the limit of its usefulness.

Dr. J. E. Boyd, Jacksonville:

After fifteen years' of experience we have come to the conclusion that it is unnecessary to hurt our patients. Every patient is a law unto himself. Each patient is handled as an individual. One patient requires to be talked to and another wants to be still, etc.

The solution: The longer we use local anesthesia, and our cases have run somewhere up into the thousands, the more we keep away from large per cent solutions. We have gotten down to a one-half per cent solution and find that it accomplishes the same amount of anesthesia and lessens the danger of postoperative complications.

There is one point in the paper that I do not agree with. If you do upper abdominal surgery under local anesthesia you are going to have almost the same number of postoperative complication as you would under a general anesthetic. I make that statement from long experience. I have been surprised at the amount of pulmonary complications following upper abdominal surgery under local anesthesia.

As to needles: I am still using steel needles and I am going to keep right on using them. I have tried every kind of needle that has been put on the market, including platinum and iridium.

I am here to tell you right now that if you use steel needles and when through with your operation discard them, you will lessen the chance for pain and improve your technique. Be sure that you are going to have a sharp-pointed and cutting needle. In my opinion that is a vitally important proposition.

We are taking up now the parasacral block, according to the method of Braun. We are trying to develop that and see in a series of cases just what advantage it is—if it is going to be as claimed by Braun.

Dr. E. H. Teeter, Jacksonville:

I think this is one of the most important papers that has been read before the meeting. There are just two points that I want to emphasize.

I have done a great deal of work under local anesthesia and also some under spinal anesthesia. I had two hernia cases, one was done under local anesthesia and the other under spinal anesthesia. I gave the spinal injection about twenty minutes before the operation. The patient apparently felt no pain. It was a perfect operation, and there was no nausea afterwards. He made a wonderful recovery.

Therefore, I think the spinal anesthesia is a mighty good thing, too.

Dr. J. Brown Farrior, Tampa:

There has been a great deal said on this subject, which has all been good, and since I, myself, am a pioneer in local anesthesia in Tampa, I feel that we can as much congratulate the Florida Medical Association upon the presentation of this exhaustive history as we can congratulate Dr. Jobson for presenting it.

I would like to stress one point that has already been mentioned—that is the psycho-emotional side of this thing. Now, in the first place, when a patient is going to have an operation and the anesthetic is going to be a local anesthetic, I believe that the easiest way to handle that patient is to make him realize that he is going to have something done and that you are not going to have something done to you. Let them understand that they are there for their benefit and that they must realize that there is some feeling, but as to the amount of pain it is practically nil. The control of your patient is necessary, and I believe the failure of most men in local anesthesia is due to the fact that they did not let the patient understand the importance of that operation. Another point that I would like to stress: Keep the pa-

tient's eyes open. I refuse to administer a local anesthetic until that patient looks me in the eyes and admits that he is there for his own sake and not for my sake.

As I stated, I am a pioneer in local anesthesia—started using it in Tampa twelve years ago. I never put a patient to sleep if I can do that operation under a local anesthetic, or by blocking.

Dr. Cline, Tampa:

I want to emphasize the use of psychology with our patients. Scientists have done a great deal of research work along this line for the past five years, and I have found that there is a great deal of importance to this subject.

One of the main points along that line is to differentiate to your patient the difference between feeling and pain. So many of us will tell our patients that we do not intend to hurt them, but that they will feel it. Now, we feel everything that happens to us as long as we are conscious, but not necessarily pain. It is hard to explain to our patients the difference between feeling and pain. Let them know that they are going to feel your instruments, but that they are not going to feel pain. You will find that this helps a great deal. And, keep your patients' eyes open. This gives cooperation that you do not get when their eyes are closed. Give them a newspaper or a magazine—let them read and read out loud.

Also, a great many cases of shock and collapse are due to hasty injections. I have forced some of my patients into shock and collapse by injecting 2 c.c. of 2 per cent solution, and by injecting it too quickly into the system, and I believe we could keep down some of these cases by making slower injections into the body. Give the tissues time to get used to this drug, and do not shock them too quickly by hasty injections.

In regard to the type of needle to be used, I would like to advise against or rather discourage the use of steel needles. Needles of 20 per cent iridium and 80 per cent platinum can be sterilized following each injection and you are absolutely sure they are sterile. I would suggest, also, that needles always be used just a little bit longer than is necessary, to avoid the possibility of leaving a broken needle in the patient.

Some of the postoperative pain and tenderness the Doctor referred to is due to improper solutions. I lay a great deal of stress to having a perfect isotonic solution, neither a hyper- nor a hypotonic solution. When the solution is too hot

or too cold we get a lot of our postoperative upset and osmotic pressure, because it is our tissue cells which receive the anesthetic, and which are destroyed when we do not use the isotonic solution; it is through these tissue cells that we get a lot of our postoperative pain.

Dr. R. B. McIver, Jacksonville:

I would like to call attention to the question of reaction. We have seen two. One I observed in a pelvic case which was operated by Dr. Field, and another where I did a caudal injection for cystoscopy.

The first case, that of Dr. Field, was a caudal and transsacral injection for pelvic repair. In this case there was a tonic convulsion, which came on about five minutes after injection had been made, lasted for ten minutes, and was accompanied by rapid pulse. The blood pressure was not taken. At the expiration of about ten minutes the operation was continued without difficulty.

In my own case, after injection of 30 c.c. of 2 per cent solution of novocain, caudal injection, the patient had a tonic convulsion, contracted pupils, rapid pulse, was dyspneic and had sense of impending disaster. This lasted twelve minutes. At the expiration of that time he quieted down, and his pulse, which had been 130, returned to normal. I then proceeded with the cystoscopy and pyelography without difficulty.

In the last issue of the *Therapeutic Gazette* they report a case in which they injected a solution to represent 9 gr. of novocain. That case was to have been a second stage prostatectomy. He developed a reaction on the table with serious symptoms, and was treated for shock. The head of the table was lowered, he was surrounded with hot-water bags, and given, as I remember it, three hypodermics with stimulants, and returned to his room after partial reaction on the table. The operation was not done at that time. A week or ten days later, the report states, the case was successfully operated.

In the second place, I want to call attention to the ease that is maintained with this method in the field of urologic surgery—not only as regards the operative procedures themselves, but as regards the examinations, which are often painful and which discourage the patients from having the necessary follow-up work done. Very often these cases require repeated cystoscopies, and if the first examination is attended by a great deal of pain, it is hard to get the patient back. I re-

member one of Dr. Boyd's patients, not so very long since, with T. B. of the genital tract, in which the memory of a cystoscopy five years previous made it impossible for us to do one without gas anesthesia. We were subsequently able to do the necessary follow-up work after gaining the patient's confidence and giving a simple caudal injection of 20 or 30 c.c. of as low as one-half of one per cent novocain. Certainly no more than four or four and one-half grains should be given at the outset. In my experience with cystoscopies, which is not very great—probably 20 or 30 cases at the present time—it is possible to do these examinations without any pain and without any injection in the urethra. Also, operations such as nephrectomies, prostatectomies, extra-urethrotomies, etc., can be successfully done.

Our experience in the field is small so far, but we have two kidneys, ten prostatectomies, and about fifteen extra-urethrotomies, which have been successfully done by this method.

Dr. Walter D. Webb, St. Augustine:

I can add very little to Dr. Jobson's excellent paper. I feel that he has covered it very thoroughly and very conservatively. I do feel that it is all right, and that in the future there will be a much more extended use of local anesthesia.

During my twenty-five years of general surgical work I have been using local anesthesia more and more. I think I did the first hernia under local anesthesia in 1899. And since then I have used local anesthesia at every opportunity when I felt that I could dispense with the general anesthesia. I not only used it considerably myself, but have had it used upon myself. I have had a major surgical operation under regional and block anesthesia, and there was very little discomfort both during and following the operation.

I do feel that there are many cases in which, of course, we cannot use local anesthesia as yet. It is difficult to get a perfect anesthetic where there is acutely inflamed tissue, although I have done an acute appendix under local anesthesia—not by choice on my part, but in cases where there was some real contrary indication to the use of the general anesthesia. I had one case very recently, where the patient absolutely refused to take a general anesthetic, having taken a general anesthesia at some previous time and absolutely refusing to take it a second time. This was an acute appendix. We opened and drained, but did not reach the appendix—a very acute case.

My experience has been more confined to cases of regional and field block anesthesia than to the more recent spine-block and intraspinal anesthesia, which I have never practiced.

I can add very little more to the discussions that have gone before my talk, but I feel that we should all extend our use of local anesthesia.

Dr. Alex M. C. Jobson (closing):

In conclusion, I would like to thank the doctors for their very generous discussion on this paper.

There is not much more that I can say except from a psychological standpoint. Some of the clinics in France are going so far as to introduce singing, victrolas, and different kinds of music. They first determine the type or kind of instrument that will appeal to the patient on the table, and then they will introduce this into the operating room. According to some of the articles in the French journals, this method is being worked out successfully.

I agree with Dr. Boyd entirely that you will get complications in upper abdominal surgery, but I do not think that you will get any more with regional and block anesthesia than with a general anesthetic. As to acutely inflamed tissue, you can do that painlessly also, provided you inject the nerve before it enters this inflamed area, and then put a field block around your area. In this way you will get away with it.

As to the rapidity of giving a regional anesthetic: Never give it fast. Always take plenty of time in giving it. When you rush the patient you upset his mental equilibrium, and he gets "nervous," and begins to worry. A little pain at the onset will influence a patient so that when you do start the surgical work they interpret everything as pain.

MAXILLARY SINUSITIS, CHRONIC—A
SURVEY OF SIXTY CASES*

JOSEPH W. TAYLOR, M. D., F. A. C. S.,
Tampa, Florida.

The object in presenting this survey is to show the relative frequency of this type of infection, the value of the transilluminator and X-ray, the chief symptoms, and the method of treatment which has proved most valuable in the hands of the writer.

*Read before the Fifty-first Annual Meeting of the Florida Medical Association, held at Orlando, May 13, 14, 1924.

In the examination of six thousand cases for various eye, ear, nose and throat conditions, we found one hundred had a chronic maxillary infection, or an average of 1.6 per cent. This we consider a very high per cent when it is taken into consideration that a great number of these patients came in for refraction, foreign bodies of the eye, tonsilitis and various eye, ear, nose and throat troubles. The writer believes that a great number of maxillary sinus infections are overlooked. In an effort to locate focal infections, we look to the teeth and the tonsils, with the results that the sinuses are often neglected. This is frequently observed where molar teeth are extracted, and an old latent chronic maxillary sinusitis is caused to flare up, with the alveolar opening failing to close.

At one time it was thought that all maxillary infections came from the teeth—ascending infection. Then it was decided that the teeth caused a very small per cent, that the majority was from the other sinuses (ethmoids and frontals)—descending infection.

Freer has recently stated that it is his belief that practically all sinus infections were of the ascending type. While his estimate may be too high, it shows the trend favorable to ascending type.

Dutrow stated that his cases showed 65 to 70 per cent of the ascending type. It is very seldom that we find a chronic maxillary sinusitis in a case where the dental line is unbroken. If the teeth are examined and a careful history regarding them obtained, it will be found in a great majority of cases that a first molar tooth more frequently, and very often the second molar or both, have been extracted. Many crowned or filled molar teeth whose pulp and nerve supply have been killed, will also be noted.

In our series of cases we find the ascending type in 67 per cent. In the series of eighteen cases in which the Caldwell-Lue was performed, 50 per cent of them were referred by dentists. Due to the alveolus failing to close, 20 per cent of the total series were referred by dentists.

The writer would like at this time to congratulate the dentists on the manner in which they are now handling these cases. They realize that a maxillary sinusitis can not be treated successfully without first closing the oral opening and establishing intranasal drainage. For that reason they are now referring them to the rhinologist for treatment.

Transillumination, if done properly, is a great

aid in the diagnosis of these cases, due to the thickness of the external wall of the maxillary sinus and the variations in pigment. The latter is especially true in cases of brunette or those cases which lead an outdoor life and take on our characteristic Florida tan. The palato facial or Heryng's method is not so accurate as the orbito-platobucal or Briggs' method. The latter method will even transilluminate the antrum of a negro.

Briggs' method is as follows: "The patient is placed on a high stool in a dark room and is requested to tilt the head backward and open the mouth. The cheek is retracted with a tongue depressor so as to bring into view not only the hard palate but also that part of the floor of the antrum in the buccal cavity outside and above the molars.

"The light is placed against the lower lid above the infraorbital notch, pushed inward and pointed downward until the infraorbital ridge is well passed, when an area of pink will be seen in that part of the roof of the mouth and buccal wall on either side of the alveolar process corresponding to the floor of the antrum."

It does not require a very dark room, one where the shades are partially drawn is sufficient. Practice with this method will soon cause us to notice the slight or great difference in the two sides.

To verify this, the X-ray can now be made or an exploratory puncture, and the cavity irrigated. We make it a rule to transilluminate each new case that comes to the office. In this way we have been able to discover several infected sinuses that otherwise would not have been diagnosed. Every physician, regardless of his specialty, should transilluminate every patient examined. It is quickly and easily done with no expense to the patient. Then should you find a questionable shadow, have an X-ray made as a check. In our office the transilluminator has checked correctly with the X-ray, and clinical findings in 93 per cent of the cases where an infected maxillary sinus was diagnosed. The transilluminator is also an aid in noting progress during treatment; as the discharge gradually lessens, the light reflex will increase.

The chief symptom for which the patient came for relief: Headache, 30 per cent (in these cases the pain is usually referred to the affected side, the temple and forehead being the chief area complained of); nasal discharge with postnasal dripping, 16 per cent; pain over maxillary sinus, 13 per cent; failure of alveolar opening to close

following extraction of molars, 27 per cent; asthma bronchial, 6½ per cent; refraction, 3½ per cent; defective hearing, 3½ per cent.

Cultures on forty-five cases showed staphylococcus albus and aureus as the predominating micro-organism. In fifteen cases no culture was obtained.

In this series there were two cases of sarcoma of the maxillary sinus. One was inoperable. The growth had destroyed the inner wall of the sinus causing a large perforation of the septum due to pressure necrosis. The tumor filled the nasal space of the opposite side. The other case was confined to the maxillary sinus and ethmoids with beginning necrosis of the dental ridge. Operation: Large external opening (permanent) through the cheek. Sinus cleaned out, also extenuation of the ethmoids. Radium applied. Recurrence after ten months.

The radical operation via the oral route was performed on eighteen cases. Four cases it was necessary to operate on both maxillary sinuses, due to bilateral infection. Eight cases the intranasal operation, with treatment from three to six weeks, preceded the radical. Ten were operated on radically without attempting intranasal drainage. Average duration of treatment for radical operation two weeks. No recurrences to date.

Dutrow says: "My end-results in some forty-odd Caldwell-Lue operations performed during the past three or four years have been eminently satisfactory, from every standpoint. Prior to that time I was rather discouraged with my treatment of chronic antrum infections, but after careful study and strict attention to operative detail, better results were obtained."

Intranasal operations in 42 cases: Cures, 74 per cent; failures, 26 per cent; reinfection after apparent cures, 8 per cent; average duration of treatment, three months.

In all cases where the sinus infection was cured, the patients were relieved of their chief symptoms. There was improvement in their general condition as most of them showed signs of toxic absorption.

The following case histories are used as an illustration:

Case No. 1—Mrs. E. M. L., aged 37, married, white. Occupation, housewife. Came to the office for the first time February, 1922, for relief of tinnitus and deafness. Family history: Two brothers and sister deaf; two of them so deaf that they use acusticons. Social history: Married fourteen years, three children healthy. No mis-

carriages. Wassermann negative. General physical condition good, except patient feeling tired. Examination showed catarrhal deafness bilateral. Transillumination marked clouding of left maxillary sinus, other sinuses negative. Nose, small spur to left along suture line. No nasal discharge. Throat, negative. X-ray report, marked clouding of left maxillary, other sinuses clear. March, 1922, sinus opened lower turbinate route. Large quantity of thick greenish pus washed out. Sinus irrigated twice weekly. Four weeks later, transillumination negative. No secretion in sinus. Patient states that she feels much better physically, tinnitus and deafness have improved.

Case No. 2—Mrs. A. J. A., aged 68, married, white, native of Canada. Occupation, housewife. Came to the office the first time November, 1922, to have maxillary sinuses irrigated. Family history, negative. Social history: Married at age 19; ten children, all living and healthy. No miscarriages. General condition fair. Present history: Patient operated two years before in Canada, intranasal route bilateral. Had been advised to have radical by rhinologist in Canada and Chicago, but refused. Examination of ears and throat negative, both middle turbinates bathed in thick mucopurulent secretion. Transillumination cloudy for maxillary. An X-ray was not made as there was an opening into both maxillary under middle turbinates. Sinuses irrigated, large quantity of thick greenish yellow pus came from sinuses. She came to the office two to three times weekly for irrigation until she returned to Canada in April, 1923. The treatment was continued during the summer and this fall she returned to Florida. We have treated her at least once each week up to the time she sailed for Europe (April 15, 1924). Her condition this year is no better than it was when we first saw her eighteen months ago. The interesting part in this case is that she has apparently no systemic effect from the infection, probably due to free drainage and regular treatment. This is a typical case for radical operation. This was advised, but refused.

Case No. 3—Mr. G. S., aged 33. Occupation, mining engineer. Family and past history negative. Chief complaint: Pain in eyes. Lids feel dry. Headaches frontal, not affected by using eyes. Patient states that he feels sluggish, that work is difficult, and thought perhaps he needed glasses. Examination: Eyes normal from a refractive and diseased standpoint; nose, negative; tonsils, removed six years ago; transillumination showed clouding of left maxillary sinus. Other

sinuses clear. Radiograms verified these findings.

On July 18, 1923, the antrum was opened under middle turbinate. Large quantity of thick greenish pus washed out. This was repeated each week for several weeks. But as the patient lived sixty miles in the country, could or did not return for regular treatment. He was not seen again until December, 1923. At this time he stated that he was feeling fine up to three weeks ago, that during this time he had gained twenty-one pounds. The past three weeks he noticed the discharge had returned, and in that time had lost ten pounds, also that all his previous symptoms had returned.

This case shows the effect of a purulent sinusitis. Also the indication for a radical operation, where it is impossible to return for regular treatment over a long period of time.

Case No. 4—Mr. G. H. D., aged 49. Occupation, machinist. Referred by W. A. Dean, D. D. S. Family history of no consequence. Chief complaint, alveolus did not close following extraction two weeks previous. Increased nasal discharge, also discharge from alveolar opening. The patient stated that he had had a slight nasal discharge from the left side of his nose for several years, that he was subject to headaches, and the past two weeks they had been severe at times, left side especially. Also his general physical condition was below par.

Examination: Throat, normal; nose, septum slight deflection to left. Pus in region of middle turbinate; right side of nose, normal; transillumination showed clouding of left maxillary; radiograms showed clouding of left maxillary; other sinuses clear.

Intranasal drainage via lower turbinate route. Daily irrigations for two weeks, tri-weekly for ten weeks. At this time the discharge was little better. The alveolus had not closed. A Caldwell-Lue operation was performed. Our operative record shows there was an opening in the anterior bony wall of the antrum the size of a large pea. This was due to neurosis of the bone. The cavity was filled with granuloma and polypus. The sinus was curetted, also the granulation tissue around the alveolus, making a large opening from the antrum to the oral cavity through the dental socket. To my surprise, this opening healed in a few days as did the sinus, and at the end of two weeks the patient was well.

Conclusion: It should be part of the routine examination to do a transillumination on all cases regardless of complaint.

The maxillary sinuses are frequent foci of infection. It is easily diagnosed and should not be neglected.

Where the dental line is broken, crowned or filled molars are found, we should look for antrum infection.

So-called cases of nasal catarrh should cause us to think of the maxillary sinuses as the seat of trouble.

The radical operation offers the quickest, surest and most permanent results and should be the method of choice, if the patient can not conveniently submit to a long course of treatment, or if there is not marked improvement after two weeks' treatment intranasally.

DISCUSSION

Dr. J. Brown Farrior, Tampa:

This line of statistics goes a little ahead of anything I know of. Regarding patient's examination, the Doctor does not state to what limit his examinations are carried. If it was transillumination alone, why you would have to regard that as not much of an examination. Now, as to transillumination: I have had the privilege of being on the floor of the Southern Medical Association when Dr. Bridges spoke on this subject—seems like it was only yesterday. In his opinion transillumination is an aid to diagnosis, but not a great aid. Transillumination does not amount to anything in my experience.

I want to prove this further by disclaiming one statement that the Doctor makes—that this is simple and easy, a diagnosis of chronic sinusitis in the maxilla. I don't know of anything in the whole field of nose and throat work that is any more difficult to do than make a positive diagnosis of a chronic sinusitis where there is no history of acute pain, acute flow of pus, or that sort of thing. And after a chronic sinusitis has been established for some time there are but very few symptoms; in fact, practically nothing is complained of. If all the eye, ear, nose and throat men will arise and talk on this subject, they cannot but agree on this.

Now, here is further proof: The X-ray, which I like to regard as a great aid in diagnosis, often leaves us still in confusion and doubt. We have hundreds of patients on record with films made to determine chronic sinusitis where we suspected it. We have found a clouding on both sides. We would puncture and get no pus, and then do a radical and still find no pus. Also there would

be no polypi. And, therefore, we would have to disregard both our transillumination and our X-ray. If the X-ray would reveal a cloud or haze, that is plain, but if it can determine anything other than a chronic spot of bone, I am not prepared to say. I wish the X-ray men would say something on this subject. It is an important question, and one which has been the source of a great deal of hard work with a great many disappointments to me.

Now, as to the ascending type of infection: I have heard that discussed, but I think you will find the percentage of such cases low, that is where we have it with toothache and bad teeth improperly filled. We must say that the descending type of infection is more in our experience the cause of maxillary sinusitis than the teeth. In chronic maxillary sinusitis you may have the tooth with the cavity, but I think that theory is practically nil. Why, because we must not disregard the fact that they are under the ethmoidal cells and frontal sinuses, and if these are involved you cannot ask if the infection comes from the ascending type. How in the world can you ask that?

Now, as to the operation: For a long time I have depended practically entirely upon the intranasal radical, but have gradually worked out of it to another method. This consists of taking out part of the bone and making an opening which will be permanent. With this method I have had disappointment in only one case. This patient had a polypi. That patient came back in three or four months after the operation. The polypi had grown out, flattened and filled up the nose. I did a radical, cauterized all points, packed, and the patient got well. Occasionally there is a case that we fall down upon.

You take a case where the tooth has been pulled and leaves an opening. Some attempt to just curette the floor of the antrum, never reaching the antrum wall. These cases must require a radical maxillary operation with no modification. What we want in this work is a 100 per cent operation. I want to say that now, because once before when this subject was discussed, I depended on the intranasal radical for a 100 per cent operation. It must be an external radical operation with no modification. Make an external incision and takedown the wall of the antrum, the nasal wall, not disturbing the inferior turbinate bone, but taking out sufficient to give the proper opening.

Dr. A. H. Freeman, Jacksonville:

I just want to discuss one point in regard to transillumination. I think we need to be rather cautious about the use of transillumination, that is you do not want to depend entirely on transillumination for anything, because if you do you will be lost. There are several reasons for this. Anatomically, there are just as many different sizes and shapes of sinuses, maxillary or any of the paranasal sinuses, as there are differences in faces and people. In other words, there are no two alike. Consequently you get no two pictures alike with transillumination. There will be a general similarity in healthy cases, but you will then get a difference in your sinuses on the two sides, and you may think that one is diseased when they are absolutely normal. Keep that in mind. The caution is this, never to depend entirely on transillumination. You must have something else to support it.

Dr. Cline, Lakeland:

As for diagnosis, the various methods save puncture through the anterior nasal antrum wall and irrigation are not dependable.

When we get a shadow with transillumination or X-ray we proceed to make a quick, simple puncture through the nasal antrum wall and irrigate. If you get pus, you know where you are, and if you fail to get pus you know there is none or little infection. Once you find pus and demonstrate the case to be a chronic condition you are wasting time with irrigations. The only procedure then is to go through the canine fossa, make as large an opening as is required to do a thorough curettage, and then make a counter opening in the anterior nasoantrum wall as large as possible to save the inferior turbinate. In this way you will practically get 100 per cent cures.

Dr. Clarkson, Jacksonville:

I am not a physician, but am intensely interested in this subject. I believe that most men doing oral surgery feel that the antrum is a "No Man's Land." The rhinologists have been using it, and also the general surgeons. But, when it comes to the form of the operation for clearing up these antrum conditions, we have not come to any definite conclusion as to whether the rhinologist is right or whether we are right in the mode of entry. I think it would be a very proper procedure for us, who are doing oral surgery, and the rhinologists to get together at some time and some meeting where we could thrash this thing

out and really come to some definite conclusion as to the best mode of entry in operating on these cases.

Dr. A. K. Wilson, Jacksonville:

I am sure we all enjoyed this paper of Dr. Taylor. It is a subject that should be brought up.

Chronic sinusitis probably gives us one of the most important foci of infection that we have, and the antrum is the most common sinus that is infected.

In regard to transillumination, I consider it as one of the most deceptive means that we have in diagnosing sinus infections. The X-ray, on the other hand, has a relative value of 85 per cent. That has been proved out in the University of Pennsylvania in a large series of cases. That does not mean that the X-ray will give us 85 per cent of our diagnoses, but it denotes that the X-ray is not positive or absolute in its findings.

We can only hope for results from an intra-nasal operation by producing gravity drainage and giving cleansing irrigations. A great many of these cases will not recover from such an operation. In that condition, we have to do a radical operation—that is, opening the antrum from the anterior wall, curette the cavity, making a counter opening under the anterior end of the inferior turbinate. In chronic sinusitis we most often have a stimulated growth of bone partly closing the natural opening of the sinus, and in this way the sinus has not its normal ventilation.

The natural opening of the antrum in lower animals is placed near the floor of the cavity. Since man has assumed the upright position the antrum has revolved on its axis, placing the natural opening well up from the floor. Hence in case of a suppurative infection the antrum can not drain properly to favor spontaneous cure.

Dr. Samuel F. Smith, Tampa:

I wish to agree with Dr. Taylor on the emphasis placed on the results from the radical operation when necessary, and also the results and the help gained from the X-ray and transillumination, although I must confess to leaning toward conservatism regarding operations in and about the nose. I do not mean by that that I do not favor operations whenever necessary, but I always like to feel entirely certain that as far as possible it is necessary before proceeding with at least a radical operation.

In regard to the place of operation: It has

been my experience and is my idea that in cases of infection from the nose that it is well to make the intersection over the nasal chamber, and in cases where the infection or the trouble comes from the alveolar processes or from the dental region, that it is well to proceed from this location.

I find that a great many patients presenting with symptoms indicating maxillary sinusitis, where the X-ray and transillumination show nothing definite, although they have the definite symptoms of pain and fullness and other things going with it, have responded to treatment along the line of serum and vaccine. I have used it quite extensively. A great many cases which show no considerable accumulation of pus necessitating an operation at once, seem to clear up promptly under the use of this treatment, and I also find that even where operation is necessary in the radical, that by supplementing the operation with the use of serum, autogenous of course where possible, that it seems very much to help in clearing up the situation and in shortening the period of treatment by irrigation and other methods.

As the Doctor said, the only way to accomplish definite results where it does not respond within a very reasonable length of time to proper treatment, is by having the radical operation, and this, as the Doctor has said, should be complete and thorough.

Dr. Joseph W. Taylor, Tampa (closing):

You noticed that we stated at first that transillumination was an aid to diagnosis if done properly. It is necessary to have the proper light and one of proper voltage so that you can increase or decrease your light. I do not want it understood that we take transillumination as a diagnosis and go ahead and operate. As to the diagnosis, it is comparatively easy if we find that the X-ray and transillumination will check in 85 per cent of the cases. Most men in doing other lines of work, if they could have something that will make the diagnosis in 85 per cent of their cases, I think, would be very well satisfied.

It is best in these cases and any questionable cases to make a puncture and irrigate as Dr. Cline stated, which does no particular harm and is comparatively safe.

As to the ascending type of infection: I have not seen an acute case of the ascending type. All of these cases we have are sent from the dentist. Some have been operated within two weeks after

the tooth had been extracted. In these cases we found an antrum filled with granulomas, and in some cases, as in one case we reported, an actual necrosis of the anterior wall of the antrum. It could not have possibly reached that stage within two weeks, and I believe that it was an acute exacerbation of the ascending type of infection.

I would like to say once more as to the radical operation, that it is the only means of absolutely curing these chronic cases. In those cases that we have "cured" by irrigations, we have tried out Dakin's and various other solutions with apparent cures in a number of cases, but we never know when we will get a recurrence. In the radical operation we are practically sure of no recurrence.

PROPHYLAXIS AGAINST PSYCHOPATHIES IN SPECIAL AND GENERAL PRACTICE

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The Autocrat at the Breakfast Table arrested thinking people by the declaration that to insure well-being he would begin with one's grandfather. Every psychiatrist knows how psychopathy runs in families, and every village boy has remarked upon the queerness of certain families.

Against these trite observations, however, must be placed the individual psychopathy of strong men of unimpeachable heredity under special stress. Such were illustrated abundantly in the shocks of the great war, and in civil life every physician has seen many psychic derelicts who are unique in their families.

Dr. Holmes furthermore goes on to point out that it is not so much the nurture of the grandfather that he is speaking of as it is the nurture the grandson derives from his own parents, whose culture is the product of their parents. As we put it nowadays, environment is as important as heredity.

Eugenists preach the contrary, and seek to deafen us with the contrast between the Jukes family and the Edwardses. On the part of criminologists of today, there has been a return to the pessimistic French doctrine of degeneration, and the born criminal is again the fashion.

While we must not pretend to gather figs from thistles, yet the nurture of the grandfather must

not be forgotten. It is significant that in one hundred minutely studied habitual criminals no instance was found by Healy and Spaulding in which the most pernicious environment was not conspicuous. It is also significant that the great majority of the waifs reclaimed from the slums of England by the Bernardo Homes become excellent citizens, for the most part as Colonials.

Nevertheless, although the doctrine of heredity is much misinterpreted, it is a great advantage in the avoidance of psychopathy to be well-born. For instance, an inevitable determinant of psychopathic behavior is that form of cerebral syphilis known as dementia paralytica. A generalized cerebral arteriosclerosis is an insuperable impediment to adequate psychic function. The form of psychopathy known as delirium is the fruit of the invasion of bacteria which are the agent of zymotic disease. Post-alcoholic depression and the spes phthisica are psychopathic manifestations familiar to every physician. Impetuosity and violence to the degree of psychopathy may be the mere manifestations of an over-active thyroid gland; so may lachrymosity and depression of spirit during intermissions of activity. Inadequacy of pituitary secretion is held by many to be responsible for the weakness of character and suggestibility which often leads to psychopathic behavior. Decrease of the adrenal output lowers ambition, and may lead to secondary depression of psychopathic character. The internal secretions of the ovary and testicle are the activators of much of the psychopathic behavior with which the morality so readily invoked has very little to do. A cross-grained temper, which makes life unbearable to the rest of the family, may be less the product of an ill-nature than of a chronic constipation or metabolic inadequacy. To elaborate upon agencies of these and other physical kinds would unduly extend these remarks.

Nowhere is little knowledge so prejudicial as in psychopathology. However, a few words must be said about the psychogenetic factors. Nosomimia of any disease may occur, but though common in some, it is exceptional in others. It is most frequent as a continuation of actual disease, perseveration. The tendency to it after injury became notorious during the expansion of railroading. Its cause then was the myth that the vibration produced spinal commotion. The real mechanism of the condition was expounded in 1909, before the International Congress of In-

dustrial Accidents, at Rome, in my paper, "Traumatic Neurosis in Relation to Babinski's Theory of Hysteria." Medical men, and particularly industrial surgeons, are now on their guard against the induction psychosis, so-called traumatic hysteria. During the Great War there was a tremendous revival of psychopathies which could have been prevented. They were due to another myth—that of shell shock. This myth was also destroyed, thanks to clinical measures devised by French neurologists on the groundwork laid by Babinski in his conception of hysteria.

Sensations referred to the heart and to the digestive organs are particularly fruitful in inducing psychopathic attitudes. The latter are too often the fruit of injudicious attention by medical men. Of the heart, however, it is not necessary for the patient's apprehension to be confirmed by medical opinion, for the choking sensation, the air hunger, the dizziness, the sense of faintness are alarming enough in themselves to provoke, when they are sudden, a fear of consequences almost panicky. This emotion, too, adds to circulatory perturbation. Hence in these cases a sound psychoprophylaxis is essential to prevent a psychopathy far more incommoding than the cardiac condition itself. The so-called effort syndrome is often a mere emotional reaction of this kind. The instance reported at length in my study of "The Genesis of Phobias," International Clinics, 1919, shows the mechanism and the manner of cure very clearly, all in "Dreads and Besetting Fears."

The most important and numerous of these psychogenetic determinants, however, arise in childhood, and for the most part within the family. It is only by a knowledge of the natural history of these that the physician can prevent future psychopathy by giving to the parents and other relatives the sound advice which so many of them are nowadays seeking so earnestly. (See chapter on "Psychoprophylaxis in Childhood," in collected papers on Psychotherapy. Badger, 1909.) The expansion of pseudoreligious and pseudophilosophical sects is an endeavor to respond to this quest. In our own profession the mental hygiene movement is its expression. The need is, of course, best fulfilled by those physicians equipped with a special study of the disorders of the nervous system, more particularly in its psychological aspect. But nothing is more fraught with dangerous counsel than an adviser prematurely specialized in psychiatry. Nowhere is a little knowledge a more dangerous thing.

The child ignorant of the world is highly susceptible to every passing suggestion. The summation of suggestions with some particular trend will deform his character. Very commonly the anxious solicitude of a fond mother leads to a timorousness of character which never leaves one. It does not often lead to so dramatic a situation as that of a boy of eight who when out of sight of his home objectivated his fears into leaping wild animals about to seize him, and would scurry away in panic. When he explicitly comprehended the role of his imagination in this and deliberately braced himself beforehand to counteract the impulse to flee he soon learned to master his phobia. (*Psychogenetic Disorders in Childhood*. A. J. Med. Science, 1911.)

An over-ambitious and exacting father may induce an anxiety in a child so great as to lead to stammering or other tic, or a loss of confidence, detrimental to future efficiency. I need not illustrate, as several examples will be found in my book, "*Dreads and Besetting Fears*."

Seclusiveness of nature is a psychopathy most detrimental to social and personal happiness, although it sometimes may be favorable to vocational success, for a time at least. It is often the fruit of a foolish shame which may dominate a family on account of lack of wealth, faulty breeding or personal appearance. Over-tall girls may be victims unless carefully dealt with. So may insignificant-looking boys. Red hair has been a cause. Scanty hirsutes in men and those overabundant in women have induced introverted behavior. There is scarcely a personal peculiarity which could not be incriminated here, and yet the same peculiarity in scores of others is without psychopathic effect. It is not the peculiarity itself, but the set of the mind towards it which is the pathogen. That set is induced by the family as a rule. A child can be indifferent to jibes from those not near to him, or he may fight them; but he cannot do either in the dependency of domestic life.

The foregoing types of mental attitude conduce to a psychosthenic reaction to life. When the dominant note of a child's upbringing is family pride, a paranoid attitude is to be expected, especially when the psychic resources are not commensurate with that pride. A chip on the shoulder, in the absence of an outlook and penetrating personality, is a dangerous piece of lumber to be burdened with.

Prudery is another attitude essentially of family origin, although often gained exteriorly also.

It has been responsible for thousands of psychopathic shipwrecks, but is rapidly falling into the background as a source of danger in these days of illumination.

Morbid attitude towards health are a more prevalent danger today. There are two extremes, one of these has been increased by the great attention paid to hygiene since the discovery of the nature of bacterial disease. Childish valetudinarians are seen by all pediatricians, who are not always guiltless in their manufacture. The preoccupation of the mother who has been reading popular articles on health with little Susan's stomach, little Charlie's chest or little Billy's bowels would be laughable were it not so serious for the child. The little thing either becomes preoccupied by every morsel he eats and every pain and becomes an early victim of nosophobia, or he becomes disgusted with such over-solicitude, goes to the other extreme and ignores the danger signals of discomfort and pain.

The opposite vicious attitude towards health has come into fashion more recently, and particularly since the dissemination of knowledge that disorders may be psychogenetic and may be removed by psychological means. Particularly responsible for this misfortune is the doctrine of so-called Christian Science, and even more so that known as New Thought, because the latter makes an appeal without reference to religion, and hence can be embraced by those of any denomination. Its claim is based on grounds allegedly purely scientific, the fallacies of which can be grasped only by those versed in the physiology of the nervous system, with which the laity are as a whole unacquainted, and in which few medical men are able to enlighten them, because even they were not until recently acquainted with the psychological aspects of human physiology, without a knowledge of which the specious arguments of amateur psychotherapists cannot be refuted.

The practice of these cultists has penetrated far beyond their immediate followers. By a kind of illogical diffusion it has affected many medical men's practice. It is responsible for such a situation as the following :

A girl in her late teens began to sleep badly, became anxious about her studies, lagged in her work and complained of fatigue. Her physician, finding no sign of bacterial disease, concluded that her condition was the expression of a morbid imagination and advised much activity, social life and exercise, including very long walks. They

persisted in this advice even though extreme fatigue ensued, which would disappear after a few days in bed, after which also the other symptoms would be alleviated. All this they attributed, and partly with reason, to the tedium of bed and the desire of the child to leave it in order to enjoy life once more. The patient became progressively worse over a period of four years until seen by me.

Now, it does not at all follow that because no structural defects nor bacterial invasions are discerned that a condition must be psychological; for functional inadequacy may be the expression either of extraordinary stress or of low stamina, without any psychogenetic factors whatever. In this instance a hypoplastic constitution was perhaps a factor; but the chief factor was an excessive kinetic drive induced partly by the ambitions of the parents; but perhaps more especially by the fervor of the child in the pursuit of the more cerebral satisfactions derived from literature and arts. The result was an exhaustion of the kinetic drive mechanism, so that when I first saw the patient, after the years of incorrect therapeusis by urging, the blood pressure was as low as 90/60 and the general asthenia was most profound.

It was only after months that the patient was restored to functional efficiency by giving her and her mother an understanding of the need for respecting the vegetative requirements with extreme watchfulness, and never allowing her enthusiasm to carry her beyond the point of early fatigue. In addition to this physical adjuvants were prescribed; the most valuable of these was the pressor substances contained in the adrenal and pituitary glands. The latter were for a time injected subcutaneously, with an effect astounding to the patient and friends. But the improvement was not permanent until an atonic colon, a consequence of the extreme asthenia, had also been dealt with mechanically.

Some have objected to psychological solicitudes on the ground that the family is a microcosm of the world, a school of adaptation from which the child should not be protected by cotton wadding, and they point to the disadvantageousness of being an only child on these grounds.

These objections are no more reasonable than would be those against better sanitation, the elimination of infection, the inoculation against disease and the provision of proper clothing and food, especially during the period of growth. No one objects to the prevention of physical defects

by the proper care of children, except a few eugenists, who declare the race is deteriorating through the conservation of the unfit. These, however, fail to take into account that man survives not because of physical endurance, resistance to infections, power of digestion, and survival under unfavorable conditions in general, but because of the intelligence which obviates these impediments to life and well-being. If a strong body or a phlegmatic character were the criteria of excellence, the hippopotamus would be the ideal of those who wish to survive. It is not then by a premature throwing into the melting pot that the physical betterment of human beings is to be sought, but by an intelligent and prolonged nurture.

No one advocates feeding strong meat to babes' bodies. It is no more reasonable to advocate the feeding of their minds with pabulum overstrong. Nurture in the family is far from complete if confined to material needs. Indeed psychic wounds may be more detrimental than physical defects in the after-conduct of life; so it is the duty of the family to save the child from psychic trauma.

Not only that, however, but just as by exercise of the proper muscles, and by proper food, a strong body develops, so by proper food for the emotions and exercise of the will a strong character is to be developed. A *laissez faire* attitude has not more justification in this than is given in physical hygiene to those discredited prophets who claim that our great-grandfathers were healthier than we because they gourmandised, drank to excess and disdained ventilation.

METHUSELAH

Methuselah ate what he found on his plate
And never, as people do now,
Did he note the amount of the caloric count—
He ate it because it was chow.

He wasn't disturbed as at dinner he sat
Destroying a roast or a pie,
To think it was lacking in glandular fat
Or a couple of vitamines shy.

He cheerfully chewed every species of food,
Untroubled by worries or fears
Lest his health might be hurt by some fancy
dessert,
And he lived over nine hundred years!

As a matter of fact, however, it is a falsification of history to claim for our day the origina-

tion of mental hygiene. Even so long ago as Sparta, a most rigorous character discipline was imposed upon the young, and the ancient Persians took the greatest care in training their nobility during childhood. Our own activity in this respect is only a revival of what had long been obscured by a preoccupation with an after-life, and after the settlement of the turbulence of the Renaissance and the Reformation by the over-development of industry and preoccupation by material needs, until the present-day return to sanity, inspired by the presence of thousands of wrecks resulting from a lack of good mental hygiene in childhood.

SOME PSYCHOTHERAPEUTIC SUGGESTIONS FOR THE RELIEF OF INDIGESTION

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General Principles of Psychotherapy as Applied to Various Forms of Indigestion.

Let me affirm as a proven fact that there are but few gastrointestinal diseases, no matter how material or far advanced, but what psychotherapy possesses for them a beneficent function. Even where a fatal termination is assured, and nothing can be done for the disease, something may be done for the patient, either by diverting the mind, or keeping alive the spark of hope, without which all would be blank despair. This is the most that can be expected in such melancholy conditions, but because a cure is not in view, the physician should not cease his efforts to infuse courage and cheer into the mind of the invalid. There are several reasons for this. In the first place there is a possibility that the fatal prognosis is a mistaken one. Many instances are on record in which, after an unfavorable prognosis was given, the patient recovered, outliving the physician who made the prognosis; again, there may be a mistake in the diagnosis, or the patient may possess a recuperative power not realized by the medical attendant. There are many objections to a gloomy prognosis, even under the most favorable outlook, and, if the physician will use to the uttermost any little grains of encouragement, while he says as little as possible concerning the less favorable aspects of the case, his influence on the course of the disease will necessarily be

uplifting; and he need not utter a single deceptive word.

THE PERSONAL EQUATION

Some physicians possess a personality which in itself inspires confidence, though anyone has within his power the faculty of cheerfulness and optimism. Undue levity in a sick room is, of course, to be deprecated, and to laugh at a patient's recital of woes, even though they be ridiculous, is nearly always harmful. Ridicule has no legitimate place in rational psychotherapy. A warm-hearted grasp of the hand on greeting a patient; a cheerful and smiling but earnest countenance, betokening a real desire to be of assistance; a sympathetic interest in the recital of infirmities—all these attributes on the part of the physician will gain the patient's confidence, and will ensure a receptive attitude for every therapeutic effort that may be later brought to bear. Everyone has heard some person remark that a certain doctor's medicine helped him more than some other doctor's, because he had more confidence in the former. This is a simple exemplification of both the influence of the personal equation and psychotherapy itself.

One of the first essentials in entering upon the treatment of a gastrointestinal disease, especially if it be chronic, is a thorough and systematic examination—more thorough, if possible, than any the patient has previously undergone. This has a double advantage—it bestows upon the physician a double knowledge of past and present conditions, and it convinces the patient that a deep interest is being taken.

Another point worth mentioning is the desirability of inaugurating some form of treatment, no matter how insignificant, as early as possible after taking charge of the case. While a leisurely amount of deliberation is necessary and praiseworthy, the viewpoint of the patient is from a different angle, and if the physician dallies too long he will lose some of his influence. A placebo can do no harm, and it will keep the patient in a more satisfied frame of mind, until the diagnosis is fully made. When a patient goes to a physician, he *expects* treatment, and if something apparently tangible is not done very soon, even the most intelligent patient will feel a shade of disappointment or dissatisfaction; and, if less intelligent, may indulge in open rebellion.

There are conditions of this sort that confront every physician, and he can, by the exercise of tact and personality, overcome them with perfect

dignity and no stultification of his professional standing. First impressions are often lasting, and that the first impressions in the mind of a patient toward the physician may be those of confidence, is important in the extreme.

PSYCHOTHERAPY IN REGARD TO DIET

A few patients complaining of digestive disturbances, especially chronic forms, are suffering from excessive eating; rather more from injudicious use of stimulants; while the majority, in my experience, suffer from underfeeding. Practically all of these dyspeptics are on a *diet*, either self-imposed or instituted by a physician months or years previously. The diet is often totally inadequate to furnish the necessary calories required by ordinary demands of the body, consequently the body is ill-nourished, the nervous poise is rendered unstable by physical weakness, and the patient is less able to fight the inroads of disease. In many instances the hunger pains, the weakness, the emotional outbursts, and the countless vague discomforts which accompany slow starvation are mistakenly attributed to *indigestion*, and the diet is still further restricted. These ill-nourished sufferers have generally developed a sitophobia, or fear of food, and it will require every effort of the physician to overcome this fear. If after careful examination, there is found present a working quantity of digestive juices, and the motility is not radically impaired by organic lesions, the dietary should be generously increased, while strenuous endeavors should be instituted to change the mental attitude of fear into one of courage and confidence. Here is the opportunity for psychotherapy.

I often tell these timorous patients that there is *positively* enough gastric juice present for their needs; that if they will eat the food as I urge, I will help them with its digestion, and that they need fear absolutely no evil consequences.

In some cases the digestive organs, which have had nothing to do for so long, will rebel, and the patient will suffer from colicky pains and some soreness. This is explained by the comparison of heavy muscular labor performed by one who has long led a sedentary life and the consequent soreness, which will pass away if the exercise is continued. Thus, after the stomach and intestines have adjusted themselves to the new and more liberal regimen, with increased bodily

strength, there will be noted increased nervous stability, a more cheerful view of life, and a general feeling of comfort and wellbeing.

As an illustration of nearly every point here discussed, I can cite the case of a lady of fifty-eight years, who came under my care nearly a year ago. She was suffering from an organic but not malignant stricture of the esophagus, which had so reduced the lumen of that canal that she could only take liquid nourishment and in teaspoonful quantities at the time.

She was thin, nervous, and emotional, constipated, suffering from insomnia, and complaining of constant "indigestion." She was habitually taking medicine for the three complaints—constipation, indigestion and insomnia. Her esophageal obstruction had been incorrectly diagnosed as "nervous affection," though never explored with a sound.

The stricture was dilated with comparative ease, until a 20 English sound could be passed with facility. She was then told to increase and diversify her daily bill-of-fare and a simple alkaline carminative was given her mainly as a placebo. She was quite fearful that her stomach would not "bear" solid food, but having won her confidence, and after earnest assurances that she was able to digest what I recommended, she began to eat.

After about a dozen good meals the pains of the supposed indigestion began to disappear, and in two weeks they were gone. She found, to her delight, that she could sleep without her accustomed "sleeping draught," her fits of crying ceased, her disposition became bright and happy, and with increased weight and vigor came satisfaction with her daily life. It is still necessary to keep the stricture dilated at intervals, but she has gained about thirty pounds, and at present seems in perfect bodily and mental health.

Another important adjunct to the application of successful psychotherapy in digestive diseases, is to look after the small and intercurrent ills as they arise. If the physician will take sympathetic cognizance of the minor complaints, and will make minor concessions in unimportant matters, he will find that he can better exert his authority in important matters. Chronic dyspeptics have more than the usual share of human frailties, and if the physician attempts to entirely revolutionize their habits and customs, he may so upset and discourage them that they will not make the proper effort to get well or to cooperate with him.

If they can have their way in nonessentials,

they will much more readily yield to advice in essentials.

CHANGE

This one word sometimes solves the whole therapeutic problem. It is noticeable that one's digestion is always good on a holiday, and many people find they can with impunity eat articles of food while on a vacation or pleasure trip which would profoundly disturb them at other times. On such occasions the mind is generally carefree, the thoughts are on external objects, while the attention is diverted from the stomach and all that pertains to it.

It is not always practicable to send a patient on a protracted vacation, nor can we always arrange a radical change in his business habits. When it is possible, however, the greater the change, within the limits of comfort and propriety, the greater the probable benefit. To take the wearied bookkeeper from his desk, and put him "on the road" for a while; to place the road-worn traveling man in the quiet haven of an office, to send the *blase* city man out among the green trees and meadows of the country; or to take the housewife, who has grown sick and weary under the monotony of life in some isolated community, and let her enjoy the bustle and sights of a great city for a season—all these, and others that ingenuity or practicability may suggest, will in many instances vary the diseased current of digestive thought and banish the introspection, the self-analysis, the self-pity.

CHEERFUL COMPANIONSHIP AND ENVIRONMENT

When the man of wisdom said, "A cheerful heart doeth good like medicine," he uttered a truism that applies to the Twentieth Century civilization as well as ancient times. The lack of sociability and good cheer at the table predisposes to indigestion, while the business man who eats his breakfast with his face buried in a morning paper, with not a pleasant smile for anyone, who eats his lunch in sour solitude and with gastronomic contemplation, is much more liable to the pangs of indigestion than a cheerful one, who intersperses the progress of his meals with pleasant anecdotes or bright and entertaining conversation. If I were asked to advise between a hurried meal with good cheer, or a deliberate meal with anger or disgust as its accompaniment, I would assuredly choose the former for safety.

It is worth the thought and time of the physician to regulate for good, if possible, the en-

vironment of every chronic dyspeptic, otherwise many a well-chosen prescription will come to naught in the presence of petty worries and repinings that seem to act with malign force on the digestive organs.

A confrere recently reported to me the case of a young lady who had long been troubled with nervous indigestion, and who was quickly relieved after changing her boarding place which was rather somber, and which numbered among its patrons some crusty and disagreeable individuals who made her excessively nervous. This physician not only insisted that she make the change but saw to it that she was established in pleasant and congenial surroundings, and the good results justified his expectations.

GAS GANGRENE COMPLICATING COMPOUND FRACTURES

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Tampa, Florida.

The disease of gas gangrene was a rarity both in occurrence and in the literature until the opening of the World War. It is true that the term "gaseous gangrene" was coined by Molier and Ponget in 1882, that the bacillus of malignant edema had been isolated in 1881, that Welch¹ had described the bacillus perfringens in 1892 in the Bulletin of the Johns-Hopkins Hospital, that this was followed by an incomplete paper on gas bacillus infection in man by Welch and Flexner² in 1896; but from then until 1912 when Guthrie³ reported eight cases of gas gangrene before the New York and New England Association of Railway Surgeons, the subject remained dormant. In his paper, Guthrie advocated procedures almost identical with those we use today, using potassium permanganate solution in place of the present day Dakin solution. Discussion of his paper showed that the cases were very rare and the members of that association had very little information about the disease. The war opened two years later and many lives were lost during the first year because of this lack of knowledge concerning the proper treatment of this terribly virulent disease. In 1915 the outlook became brighter due to the purely empirical measures adopted, but it was 1916 before any real constructive work was done except for the isolation of the bacillus edematiens by Weinberg and Seguin⁴ in 1915. The year 1917 brought

forth much experimental work on the pathology of the disease and the prophylactic and curative values of sera. Wallace, Taylor, Weinberg, Seguin, Leclainche, Vallee, De Lavergne, Duval and Vaucher were prominent in this work in Europe. In this country, Bull and Pritchett's⁵ work at the Rockefeller Institute won national recognition. Then, as Sir Cuthbert Wallace⁶ remarks, "the war came to an end at the very moment when the organization for the investigation of this disease seemed at last to promise a settlement of many of the problems."

However, we as Railway Surgeons are confronted by those problems constantly. A large percentage of our cases resemble war casualties. Many of them are compound fractures with the muscles thoroughly macerated, in all points like a true shrapnel wound. With us the danger of gas gangrene is ever present. We must be prepared to diagnose the incipient cases and treat the advanced ones. To do this we must be acquainted with the present status of the prophylactic and curative treatment of the disease.

The general term, "gas gangrene," includes the lesions produced by a group of organisms, anaerobes and aerobes, of which the principal ones are the bacillus perfringens or welchii, the bacillus sporogenes, the vibron septique, and the bacillus edematiens. Usually the infection is a multiple one. The organisms belong to the intestinal flora and are ever present on clothes. Simonds⁷ found the spores of the bacillus welchii group in all uniforms of Belgian soldiers and in all samples of new cloth from which the uniforms were made. As Gemmill⁸ pointed out in May of this year, there is considerable confusion in regard to the action and clinical symptoms produced by the various organisms. There would appear to be two main varieties of the disease, first the classical emphsematous type and its derivatives; second, the toxic or edematous type and its derivatives. In the first group, the clinical symptoms make their appearance early, the disease is confined chiefly to the muscles, the disease may often be cured by removal of groups of muscles, and by guillotine amputations, and the mortality is about 16 per cent. In malignant edema, on the other hand, the symptoms begin later and the infection is more superficial, affecting only the subcutaneous tissues, the muscles escaping. The mortality is 100 per cent. Besides these two main types, there may be the mixed type and the putrefactive type.

According to Keith Inglis,⁹ gas gangrene oc-

curring in civil life may be divided into two classes, depending upon the mode of infection. The first class includes those lesions in which like the gas gangrene of military practice, the infection is due to contamination of the wound by soil or material containing pathogenic anaerobes which originally came from animal feces. The second class includes those lesions in which infection is not indirect by contaminating soil but direct by the patient's own intestinal organisms. Inglis reported in June, 1923, three cases of uterine sepsis ending fatally in which at post-mortem gas bubbles were found in the liver and spleen and he thought the patient was probably infected by pathogenic anaerobes from the patient's own alimentary canal. Gemmill reported another such case in May of this year. As all four of these cases might have occurred after attempted criminal abortion, the infection might have apparently been introduced into the generative tract from the outside and Inglis' hypothesis would seem unnecessary. However, the case of abscess of the liver due to bacillus welchii infection reported by Snyder¹⁰ in May of this year would seem to support this hypothesis of gas infection from the intestinal tract. In gas gangrene complicating compound fractures we have only to deal with the first class and our problem naturally resolves itself into diagnosis and treatment.

The greatest help in the early detection of gas has been the X-ray. H. N. Berry¹¹ in 1916 noted that in all cases of diffuse gas infiltration shown by the X-rays, crepitation of the tissues could be felt. Where only a few discrete gas bubbles were shown, nothing abnormal was palpable. Black¹² confirmed this in 1917. Ritzman¹³ reported two cases diagnosed by the X-ray in 1923, and he advised that when the history and nature of the wound are favorable to the development of gas infection X-ray examination should be made every six to eight hours during the first few days, as this would reveal it before any of the typical symptoms are present. In Germany Biermann¹⁴ in 1916 wrote of striking the region with the thinnest pincers available held like a tuning-fork. When there is gas, even in the depths of the muscle, there is a dull note like a "cracked pot sound." The exact area could be thus outlined. Maybury¹⁵ of the British Army brought out in 1918 that the stethoscope is a great aid in hearing the crepitations. The classical symptoms of a developed case are swelling of the tissue, rapid pulse, tympany, crepitus, discoloration of the skin, odor, ability to milk gas bubbles out of the

wound, thin discharge, and the maintained intelligence of the patient.

The treatment of gas gangrene, whether from the prophylactic or curative side, is either surgery alone or surgery plus the use of sera. Emery¹⁶ in 1916 showed that bacillus perfringens is a frequent contaminating organisms of wounds but in most cases it fails to produce gas gangrene and seems non-pathogenic, probably because it is rapidly destroyed by normal blood and is strongly chemotactic toward leucocytes which promptly destroy it. The special conditions leading to its rapid development are those resulting in tissue destruction and interference with the local circulation. Therein lies the basis of all surgery directed at preventing the occurrence of gas gangrene. The process of removing crushed and macerated tissue, pieces of clothing and other extraneous dirt that might have been carried into the wound, removal of loose pieces of bone, is called a debridement. It is not only essential that all crushed and macerated tissue, particularly the muscle, be trimmed away, but that the muscle remaining after the debridement have ample circulation. The circulation within a muscle is largely terminal and while the capillaries anastomose, the larger trunks do not. It is therefore imperative that the larger blood vessels to the muscles be not damaged. If so, better remove the muscle. Following the debridement, there are two alternatives and the choice between them must be left to the individual surgeon. General rules as to this often leads one astray. It has been said that during the first ten or twelve hours after the injury, primary closure without drainage is indicated. Virulent gas gangrene often gets a good start in the first six hours and primary closure would certainly be out of place long before the twelve hours had elapsed. Much can be concluded from the appearance of the wound. Personally, in the presence of a deep dirty wound I have an uneasiness about doing a primary closure later than three hours after the injury. We do not have to adopt the heroic measures in civil practice that were often required in military surgery and the patient should be given the benefit of the doubt. In the doubtful cases, assume the wounds are already infected and after the debridement, insert Carrel tubes in sufficient number to supply the entire wound and instill the Dakin solution every hour during the day and every two hours during the night. At the Rockefeller Institute, where we had ample time to thoroughly compare the two methods, we felt that

the hourly or two hourly instillation of the Dakin solution was more efficacious than the continuous drop method because it added the benefits of a mechanical irrigation to the solvent and sterilizing qualities of the Dakin solution. The solvent power of Dakin solution upon necrotic tissue is wonderful, but let me insist that real Dakin solution be used. The time for secondary closure can be judged by the general condition of the patient, the appearance of the wound, and by the bacterial count.

The surgical treatment of established gas gangrene is immediate operation under nitrous oxide-oxygen anesthesia if possible, with free incisions and excisions, removing all discolored non-contractile muscle and leaving only muscle that is of normal color, is actively contractile, and bleeds easily. Avoid the use of tourniquets whenever possible. Stop all bleeding and separate the flaps well. Guillotine amputations may be necessary. Here again the Carrel-Dakin treatment should be used with a secondary closure.

But what has happened to the serum treatment that promised so much at the close of the war? It is true that the serum of Bull and Pritchett proved of little value in France. However, encouraging reports come to us from France of the results obtained with other sera. The most successful of these were the anti-perfringens, anti-vibron septique, and anti-edematiens sera of Weinberg and Seguin,¹⁷ and the polyvalent serum of Laclainche and Vallee,¹⁸ used according to the method of Sacquepee and De Lavergne.¹⁹ With the first, the prophylactic treatment was much more pronounced than its curative value. Excellent results with the polyvalent serum in the treatment of gas gangrene have been reported by Sacquepee and De Lavergne. Duval and Vaucher²⁰ reported that by the use of the mixed sera of Weinberg they were able to reduce the mortality from a normal average of 16 per cent to 315 per cent. In spite of these encouraging reports, Battle Malone²¹ in the *Railway Surgical Journal* of 1919 concluded that while the opinion is held that a serum treatment is of positive value it is hardly probable that we will rely upon it in civil practice. And the majority of our profession seem to have taken just that attitude. As Goodman²² remarked in the June number of the *Annals of Surgery*, "Death from tetanus would seem unpardonable on account of neglect of a prophylactic dose of serum administered in a case of street injury. Nevertheless it appears that one of the most potent therapeutic measures discovered as

a result of the recent war is either forgotten or we have not had an epidemic of this gas infection brought home to us to the realization that prophylactic measures might be applied to prevent the occurrence of such disaster." Wallace, in Keen's *Surgery*, also speaks of the favorable effect the sera made on the mind of the French surgeons and is of the opinion that every effort should be made to continue and enlarge the treatment.

In searching the literature for information regarding the serum treatment, very little can be found in American literature on the subject, but much has been written in the French. However interesting that may be from a scientific standpoint, it does not practically aid us in this country. Following the war Bull and Pritchett failed to report the results obtained in France with their serum. Gemmill mentioned Bull's serum in his article of May of this year, but said nothing concerning its use. Goodman reported a case treated with the tetanus perfringens antitoxin that recovered without an amputation and his report is the only one in current American literature. He secured his antitoxin from the Lederle Laboratories. Following this lead, letters were written to the Lederle Laboratories, to Dr. Bull, and to Dr. George Stewart who had charge of the surgical division at the Rockefeller Institute during the war and used the serum under Dr. Bull's direction on several cases of gas gangrene. The Laboratories replied as follows: "The tetanus perfringens antitoxin which we are dispensing was prepared according to the methods and suggestions of Dr. Bull. We have never pursued the marketing of this product with as much interest as might have been expected because we felt that its use in normal times was very limited. We believe that the product is based on right scientific information and that its use as a prophylactic in certain types of wound would be justified and also that its use as a curative agent has given good results. It is quite possible that while this product would not have a wide use, that there is still sufficient reason to make it available and we will be glad to cooperate with you to the extent of having a supply of this antitoxin stocked with E. H. Cone in Atlanta, and our own office at New Orleans, and believe these depots could reasonably accommodate your needs. If, as seems quite possible, there has been a need we have overlooked in this respect, we will be glad to take this matter up in further study with the possible preparation of an antitoxin against one or more

of the other important anaerobes that may probably be met with in wound infections. The tetanus *perfringens* antitoxin as we had prepared it contained approximately 1,500 units of tetanus antitoxin and 10 units of *perfringens* antitoxin in 10 c.c. The prophylactic dose recommended was 10 c.c. subcutaneously and curative dose was 200 c.c. intravenously followed in six to eight hours as required, it being the opinion that there is little good in using a total dosage of above 500 c.c."

In a subsequent inquiry regarding the price at which this antitoxin could be furnished, the Laboratories quoted a price of \$15 per 100 c.c. of serum. This would mean a cost of \$1.50 per 10 c.c. or prophylactic dose, which is less than what the layman pays at the average drug store for 1,500 units of tetanus antitoxin alone.

Dr. Bull replied to our letter in his usual straightforward manner. He says, "The practical side of gas gangrene antitoxin was disappointing. It would probably do some good as a preventive if given when injury occurs, but cases are so infrequent in civil life that it is not practical to have it on hand. I don't believe any serum has been made since the war."

Dr. Stewart writes: "In gas gangrene the best thing, of course, is prevention. In fresh accident cases we do not have an infection of any kind if proper surgical clean-up is done in the beginning. As far as serum treatment is concerned, while we got some good results at the Institute, it did not turn out to be of any great value in these cases and has almost been discarded. Bull has not given out any more recent reports of his work. I still feel that with compound fractures infection is due to a poor clean-up immediately after the accident."

Everyone will agree with Dr. Stewart regarding the proper surgical clean-up of the wound. As to the infrequency of the gaseous infection, there is a divergence of opinion. During the past twelve months, there have been to my knowledge three cases in Tampa. All three patients died. The first case was an elderly white man shot in the right thigh on December 2, 1923. He was taken to the city hospital immediately after the injury occurred and received prompt treatment from a good surgeon who performed a debridement and closed the wound partially and inserted an iodoform drain. The pathological findings as recorded on the operative chart were as follows: Gunshot wound of the middle third of the right thigh. Entrance wound one inch in diameter

extending down through the thigh muscles, mushrooming the femur at the middle third. Exit wound on internal surface of thigh. The patient was admitted at 4 a. m. and the temperature was 97.0. At 8 p. m. the temperature was 102.0 and continued high until just before death, at 4 p. m. on December 4th. No radiograms were made in this case. No crepitations could be felt on the third, and the surgeon thought the patient was in fairly good condition. A note was made on the day of death and reads as follows: Wound dressed. Edema of the upper part of thigh. Skin dark bluish. Crepitation under the skin extending up to Poupart's ligament and into the peritoneal cavity.

The second case was a negro gambler shot at the junction of the lower and middle thirds of the left leg at 3 p. m. on Sunday, April 6, 1924. A compound fracture was produced with much splintering of both bones of the leg. The patient refused operation until 11 p. m. Monday when his sister arrived from a distant town. The wound had been swabbed out with iodine immediately after the accident. At midnight Monday the leg was removed about four inches below the knee by a very good general practitioner. The doctor thought the tissues were normal at that point. The following day the stump was badly swollen and gas bubbles could be felt. The flaps were retracted and the wound irrigated and drained. On Wednesday the stump began to turn black and the gangrene continued to ascend until it reached half-way to the hip on Friday. The patient died at 1 p. m. Friday after he had been placed on the operating table for disarticulation at the hip joint.

The third case is the most interesting of the three and illustrates how virulent the gas infection may be. A Cuban boy fell from a tree on Monday afternoon at 5 o'clock, receiving a compound fracture of the right wrist and a simple fracture of the right elbow. The family physician was called who gave the boy immediate attention. The upper fragment of the radius was found projecting through the wound covered with dirt. The bone and the wound were cleansed with 1-1000 bichloride solution and the wound was swabbed out with 2 per cent mercurochrome, and the bone replaced in the forearm and a sterile dressing applied over the wound which was about two centimeters in diameter. A temporary splint was applied to the arm and forearm. The following morning at 11 o'clock the boy was taken downtown by the doctor for a radiogram, but the

dressings were not removed and the arm and forearm were not examined. That evening the boy began to complain of pain in the arm, but the doctor was not summoned until the next afternoon when he found the forearm to be black. The boy arrived at the hospital at 7 p. m. Wednesday. At that time the arm was black to within three inches of the shoulder. There was crepitation several inches to the left of the midline both front and back. The temperature was 99.6, pulse 120, respirations 40. The boy was mentally alert. No hope was entertained for the boy's life, but it was thought best to at least make multiple stab wounds to allow the escape of the gas. The boy died at 5 a. m. Thursday, his mind remained clear until three hours before death.

In conclusion we wish to stress: First, the great importance of a thorough debridement and cleansing of the wound; second, the value of the X-ray in the diagnosis of early gas infection; third, the possibilities of sera as prophylactic and curative agents, and, fourth, that gas infection is not the rarity formerly supposed.

BIBLIOGRAPHY.

1. Welch, W. H., and Nuttall, G. H. F., Bull. Johns-Hopkins Hospital, 1892, Vol. 3, 81.
2. Welch, W. H., and Flexner, S. J., J. Exp. Med., 1896, Vol. 1, 24.
3. Guthrie, Donald, American J. Surgery, Jan., 1920.
4. Weinberg, M., Glasgow Med. J., April, 1916.
5. Bull, Carroll G. and Pritchett, Ida W., J. Exp. Med., 1917, Vol. 26, No. 1, 119, No. 4, 603, No. 6, 867.
6. Wallace, Sir Cuthbert, Keen's Surgery, Vol. 8, p. 90.
7. Simonds, J. P., J. Exp. Med., June, 1917.
8. Gemmill, W. F., S. G. and O., May, 1924, Vol. 38, No. 5, 650.
9. Inglis, Keith, M. J., Australia, Vol. 1, 7, Jan., 1923.
10. Snyder, C. C., S. G. and O., May, 1923, Vol. 38, No. 5, 605.
11. Berry, H. M., Proc. Roy. Soc. Med. Sect. Electro-Therap., 17, 1916.
12. Black, H., Brit. Med. J., Jan. 6, 1917.
13. Ritzman, A. Z., Atlantic M. J., Vol. 26, 676, July, 1923.
14. Biermann, Munch. Med. Woch., Oct. 31, 1916.
15. Maybury, B. C., J. Roy. Army Med. Corps, Jan., 1918.
16. Emery, W. d'Este, Lancet, May 6, 1916.
17. Weinberg and Seguin, Presse Med., Feb. 22, 1917.
18. Hanquet, Maurice, Le Serum de Leclainche et Vallee dans Le Traitement Des Gangrenes Gazeuses et de Certains Etats Infectieux. Paris Theses, 1919-1920.
19. Sacquepee and De Lavergne, Presse Med., Feb. 20, 1919.
20. Duval, Pierre et Vaucher, E., Essai de Serotherapy Preventive Antigangreneuse, Bulletins et Memoires de La Societe de Chirurgie de Paris, 1918.
21. Malone, Battle, Railway Surg. J., Vol. 26, 67, 1919.
22. Goodman, Chas., Annals Surg., Vol. 29, No. 6, 806, June, 1924.

THERAPEUTIC INTRA-MUSCULAR MILK INJECTIONS.*

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From the dawn of history, man has believed that there lies in milk some substance of therapeutic value, and that milk can be used in inflammations. Since ancient days milk has been dropped into the eye sac in ocular affections by the laity. The practice has been regarded as a superstition by medical men, and undoubtedly with justice; nevertheless there remained a grain of truth in the practice, and the reason of its disrepute was ignorance of the proper method of use.

We all know the tonic effects of a milk diet in illness, and often we have observed the fact that nursing infants enjoy a higher immunity to family infections than their older brothers and sisters, despite the universal practice of all infants in putting everything they can get hold of into their mouths.

It has been called to our attention that people living on a diet of milk products are hardy folks and tend to live to an advanced age. A spark may be fanned into a flame, and just at the present era of medicine the flame is beginning to appear from this particular spark. And we find in ophthalmic literature numerous references to intramuscular milk injections in the treatment of ocular inflammations.

We all know how vulnerable a part the eye is for infection. From the first hours after birth until the deathbed the tissues of the eye offer a most favorable lodgment for pathogenic bacteria, and the most apparently inconsequential, innocent, local redness of the conjunctiva or abrasion of the cornea may even in a few hours lead to a crippled eye, with adherent iritis, or within a few days to panophthalmitis and total loss of an eye.

In eye infection the surgeon's hands are tied and restrained from measures possible in other parts. Energetic and drastic measures are often impossible. Bland and weak antiseptics must be used here.

Operations here are more hazardous, and an opened vitreous chamber is as prone to destruction as an opened egg, especially when the operation is done in face of even the slightest conjunctivitis.

*Read before the Dade County Medical Society, May 2, 1924.

These facts have led to alertness and search for ways and means to lessen hazards and to cure infections more certainly than before.

Blandel and Robin in 1923, so far as I know, were the first to use injections of milk in ocular infections; they used parental milk, and from France and Germany the method spread to Spain and England and Italy; in Austria a new application was made of the treatment; there goat's milk and cow's milk were tried with wonderful success. I believe any mammalian milk may be used; but in this country cow's milk is so universally procurable, that it is about the only milk we use.

According to reports, milk injections are particularly efficacious in severe conjunctivitis of all bacterial types, gonococci, pneumococcic, diphteria bacilli, streptococci and staphylococci.

Milk injections are marvelously effective in severe iritis, choroiditis and panophthalmitis, but in the last-named disease the treatment must be begun early and continued daily for many days and may be the only hope of saving the eye.

METHODS OF USE AND PREPARATION

Cow's milk, goat's milk or human milk is obtained and boiled 10 or 15 minutes; ordinary bottled milk is just as good as any other, and it is thought that the bacterial content does not matter.

An ordinary Luer 10 c.c. glass syringe is what I use; it is sterilized along with the needle, and the injection is made in the gluteal muscles after proper cleansing by washing in soap and water and painting with iodine tincture.

Various methods are in vogue; some boil 10 to 15 minutes, let cool, and boil 5 or 10 minutes more. Personally I have it boiled 10 minutes and use it at once. I have taught the druggist at the Arcade Pharmacy how to boil it and put it up in a sterile bottle, with a sterile cord.

When I want it I simply telephone for it and they prepare and deliver it in half an hour. I order it fresh for every case and never use stock sample; some physicians do that, having it boiled in the morning and use from the sample all day; some use milk from which the cream is decanted, but I prefer whole milk well shaken up.

The dosage is from 2 to 15 c.c. I usually start off with 5 to 8, most always 8; in severe cases I repeat every two or three days and never use less than 8 c.c.

Patients often, but not always, have a chill

lasting from five minutes to two hours, this being the longest, and once in a while they suffer nausea and emesis, but not very often. It seems to me that in those cases having severe reaction the results are the best.

At first I dreaded local infection at the site of the injection, but have never had one. I have never experienced anaphylaxis in a case. In one of my early cases the druggist misunderstood, and boiled the milk only two minutes; in that case the patient found it uncomfortable to sit down for a few days, but outside of that I have had but very little soreness after injections; the next day it is hard to find where you made the injection. If there ever has been any infection, I have not known of it.

It is thought that the reason we do not get frequent anaphylaxis is because the human race is desensitized from long-continued use of milk products.

CASE REPORTS

Mr. E. S., age 50; nationality, Swiss; February 19, 1924; ulcer of the right cornea, outer quadrant. Had intense photophobia and lacrimation, conjunctivitis and iritis with adhesions. Under mydriatic the iris dilated into a small triangular window; he had sleepless nights for three nights in spite of hypnotic and was doing badly; on third day gave 8 c.c. bovine milk deep into gluteal muscles, slept well that night, pain and lacrimation stopped, photophobia diminished. On the fifth day repeated same dose, adhesions gave way, eye cleared, conjunctivitis and all symptoms abated, and ulcer healed rapidly, patient was well in a week after first injection. This patient had a chill lasting two hours and vomiting after first injection only.

Mr. E. J., aged 54; had a serpigenous ulcer of cornea which on March 10th was 5 c.m. long. Cauterized it, severe pain subsided but ulcer continued to grow at the ends; on March 14th had 8 c.c of milk. Ulcer stopped and started rapidly to heal, so that on March 17th could only be seen by staining and magnifying glass, no opacity was left after March 19th; patient was discharged a very grateful patient.

Mrs. M. W. (widow), aged 75; September 20th came with a catarrhal conjunctivitis. Case did poorly, came often and I wondered at her patience; on December 16th she accidentally got tooth paste in her left eye, had severe keratitis and a corneal ulcer developed; eye was promptly treated with atropine and just as promptly the

patient developed an acute glaucoma and intraocular tension went up; patient was nauseated constantly and in a bad condition. Iritis occurred also, in spite of which I had to use miotics. Had 5.8 10 10 c.c. of milk every three days. All symptoms mentioned rapidly disappeared and her vision is 20/20 each eye. That was a remarkable case and the cure was almost miraculous. This patient had no reaction to the injections.

Mr. E. P. K., aged 60; had the fourth attack of iritis in right eye. Pupil dilated oblong and adhesions would not give way. Had regular treatment with mydratics, etc., and felt well and stopped treatment. March 4th had relapse with intense pain in forehead; patient smelt bad and had a septic look, and was very much discouraged and very peevish. Given a milk injection 10 c.c. In two days looked like a different man, had no pain for the first time; pupil dilated evenly and he said his eye "felt better than it ever did," had some bad teeth taken out and two more injections as a prophylactic, and was a most enthusiastic patient, with renewed faith in the medical profession.

Mrs. Martha N., aged 54; hydrochloric acid burns of both eyes, left eye ulcerated in numerous places, cornea dull, gray, opaque. Adhesions had to be broken up every day to keep upper and lower lids from growing to eyeball. Just as one set of ulcers healed, another set appeared. Developed abrasions on the cornea and it looked as though patient would lose left eye in spite of all that could be done. Resorted to milk injections every three days; almost marvelously the ulcers on both conjunctives and cornea and eyelids healed, the keratitis disappeared, the opaque cornea became gradually transparent and sight returned to what had been a blind eye. At present she has better vision in that eye than the other. The conjunctiva has numerous scars, and is injected and hyperæmic, but cornea is as clear as a baby's. This case is truly remarkable, and a most estimable woman has had her vision saved and I ascribe it largely to the lacteal injections.

The last case I wish to report is one in which milk was used wholly as a safeguard against what might have been regarded as an inevitable infection.

Mrs. E. F., aged 65; acute congestive glaucoma O. S. Intense conjunctivitis, terrible pains in jaws, face and head; patient said she wished she could die, and I think she meant it. She was a refractory patient and resisted all kinds of

treatments and operations, vomiting was constant day and night. She at last submitted to treatment, but miotics had little effect and pupil remained dilated, in spite of all treatment, although the symptoms except the vomiting abated slightly. After suffering a week, after I saw her, she, or her family I should say, submitted to an iridectomy. Dr. Turner gave the anæsthetic and a sclerotomy-iridectomy was done in spite of the conjunctivitis; immediately all symptoms abated the conjunctivitis; the cloudy cornea and vomiting remained, milk injection was used three times, and the cornea cleared so that a cataractous lens could be seen. After these injections her eye rapidly cleared, but the injection subsided very slowly. Her tension went up to 65 with the Souter tonometer before the operation. Had we not had recourse to the milk injection, she most likely would have had post-operative infection in view of the conjunctivitis.

THE THEORIES OF MILK INJECTION

Lieberman of Germany thinks milk injections act in this way: Lysine is produced in the blood and carried by the vessels in a state of hyperæmia to the arena of the disease where the specific curative action takes place. Fradkine refers to Ehrlich's theory of immunity from the alexine in milk which set free in the blood after absorption into the circulation after injection, causes a passive immunity to invading bacteria. Others believe the milk excites an intense phagocytosis.

Whatever theory is right, the fact remains that in milk injections we have a remarkably efficacious method of combating infection. Milk is a product obtained anywhere at almost no cost and is easily prepared. I believe that it can be applied to other infections than ocular ones.

The *Therapeutic Gazette*, May, mentions successful use of milk injections in 100 cases by Tananbaum; his cases were ulcers of the leg, puritus, furunculosis and acne.

The *Medical World* of April has an article mentioning success in milk injections in purpura hemorrhagica; arthritis and epididymitis respond well to milk injections according to an article in the *Practitioner* of April, 1923.

As a prophylactic milk injections are used in all major ophthalmic operations in Vienna today and without doubt it is going to be a great boon to ophthalmic surgery in this country.

LETHARGIC ENCEPHALITIS

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Seven years ago medical men were very much concerned about a strange disease which was rapidly spreading over the world. To most of us it was entirely new and gave us lots of trouble in making a correct diagnosis. I think I am safe in stating that most cases were not properly diagnosed during the first few months the disease was in progress. Perhaps most cases were considered tuberculous meningitis, or influenza during the acute stage.

The disease seemed to follow in the wake of the recent pandemic of influenza and had its origin at about the same place. The first cases were reported in Austria during 1917. By 1918 cases were reported in France and England, while in the United States the first cases occurred during the winter of 1918 and 1919. About the only reference found in medical books seven years ago to a similar condition was regarding noma, a disease found in northern Italy following the influenza of 1889, which was probably identical to the disease we are now dealing with. From the brief amount of space given to noma in medical works there must have been comparatively few cases. During the past seven years there have been thousands of cases all over the world, but more especially in the north temperate zone. It is most prevalent during the winter and spring months and no age is exempt, although young adult life seems most susceptible. We now think that following each pandemic of influenza there have been cases very similar to the ones we have now, but apparently never before have there been so many nor have they continued over such a long period. Just why it should follow great pandemics of influenza is unknown. It does not seem to be more common in those who have recently had influenza; however, there seems to be some connection or association between influenza and this other disease which we call lethargic encephalitis.

The etiology is still unknown. Many research men have reported having found the causative organism, but none have proven to be authentic. It seems to be a filterable virus which gains entrance by way of the nose-pharynx. It is infectious during the acute stage and also during the Parkinsonian or late stage. The incubation period seems to be short, but to my knowledge no certain length of time has been established.

It is so seldom that two persons in the same household are afflicted that it is hard to work out the incubation period. Only under certain conditions do we seem to contract it, however in Northern Sweden in scattered districts people do not seem to have the immunity that people in crowded districts do.

The acute stage of the disease may last from three to eight weeks, but many cases are so mild that the acute stage is over in a few days and often overlooked until the late symptoms or sequelæ develop. Then the patient will admit having felt badly for a few days, and may state that he saw double or had muscular twitching for a few days, but did not feel sick enough to call a doctor. On two occasions mothers brought their sons to my office to find out why they slept day and night and appeared so lifeless. For several days they had slept constantly excepting when aroused and then would quickly slip back into their peaceful slumber. They had the usual blank expression. Both admitted having seen double for a few days, had slight fever and headache, but did not feel that they needed medical attention. Other cases begin with a mental excitation stage instead of lethargy. Many cases go unrecognized until the Parkinsonian syndrome develops or a change in disposition and personality is noticed. Children under 20 are more susceptible to change in mentality and disposition than adults.

Pathologic findings are chiefly confined to subthalamic region and mesencephalon, but may involve the meninges or upper cord. There is perivascular infiltration of round cells, vascular congestion, evidence of toxic degeneration of nerve cells, proliferation of mesoblastic cells and glial proliferation, much the same as we would find in any inflammatory condition in the brain.

The usual early objective symptoms are: moderate rise in temperature, mask-like expression, slight conjunctivitis, lethargy or irritable and excitable mental state, slow response to questions but clear-cut answers. If lethargic type, patient is easily awakened when spoken to but quickly returns to lethargic state when undisturbed, strabismus, nystagmus, facial paralysis, tremor of facial muscles while speaking, tremor of tongue on protrusion, congested eyegrounds without choked disk, pupils regular and react to light and accommodation, no rigidity of neck, no Kerning or Babinski, increased knee-jerk, negative Rhomberg, blood pressure normal, blood count shows slight leucocytosis, 8 to 12,000,

otherwise normal; spinal fluid under slightly increased pressure, otherwise normal. There may be a slight increase in sugar content and cell count in some cases. Not all of these findings would be found in one case, but part of them are usually found.

The late objective findings are: Parkinsonian syndrome, change in personality and disposition, dementia, torsion spasm, athetoid movements, tics or clonic contractions of a certain group of muscles, epilepsy, hemiplegia, hemianesthesia, and catetonia with absence of knee-jerk. Again we would not expect more than part of these findings in any one case.

The early subjective symptoms are: Headache, dizziness, marked weakness, double vision, drowsiness or nervousness depending on type, photophobia, inability to read, difficulty in eating due to facial paralysis, loss of movement or loss of sensation in one side.

Later symptoms are: Lack of ambition, disturbed mental state, muscle spasm, constant movement of hand, foot, or certain groups of muscles which becomes chronic, and complete helplessness in extreme cases.

Diagnosis is largely made by history, findings and exclusion. There are no cardinal symptoms or findings which will make a positive diagnosis excepting as we take positive and negative findings and put them together. Tuberculous meningitis and brain tumor are perhaps the most difficult to rule out, especially brain tumor involving the subthalamic region. Some cases are quite easily diagnosed and others are extremely difficult. Double vision or other cranial nerve paralysis, with lethargy or mental excitation and muscular twitching, coming on after a mild sickness, which may have been taken for grippe, would make us suspect epidemic encephalitis. One usually comes to a diagnosis by exclusion of other diseases which might produce the symptoms we find more than by any particular symptoms or findings.

The treatment is mostly symptomatic, although convalescent serum is apparently giving good results in many cases.

The prognosis is good as to life but bad as to complete and permanent recovery. Perhaps not more than 10 per cent die during the acute stage and from the number of late symptoms or sequelæ it is not likely that more than 10 per cent will remain permanently well. This would leave 80 per cent with some defect after once having had even a mild attack of this peculiar disease.

TRAUMATIC APPENDICITIS

L. S. OPPENHEIMER, M. D.,
Tampa, Florida.

Its medico-legal importance, and the fact that two such cases have been lost in the courts during the last two years by companies for which I am surgeon, has impelled me to write this short resume of the subject.

Dissenting opinions of prominent writers emphasize the importance of clarifying the case.

There is probably no question that appendicitis is an infectious disease caused by the entrance of infectious matter from the cæcum into the appendix through its lumen.

Abnormal appendices are by no means confined to persons who have suffered from symptoms of appendicitis. Rothman quotes the following authorities to verify this:

Aschoff reports 50 per cent of persons over 40 coming to autopsy as having normal appendices.

Pankow—in 150 cases where the appendix was removed as a routine measure, without previous symptoms, only 24.66 per cent of normal appendices were found.

Kroenig—in 28 cases where the appendix was removed as a merely routine measure, only 18 per cent were normal.

Rothman, in describing the appendix as "The Abdominal Tonsil," speaks of it as a lymphoid organ, bordering on a cavity rich in bacteria, hence peculiarly susceptible to infection.

The opinions expressed by some authors that they believed that trauma was an etiologic factor in some cases of appendicitis, appears to be based entirely on the observation of others.

For instance, Keen in 1908 quotes Von Neumann in 1892 as having figured that trauma produced it in 10 cases out of 150 in his clinic. Osler in 1899 believed in trauma as a cause.

Kelly in 1909 gathered 50 cases from the literature to show that trauma may produce appendicitis. But in his caption over the tabulated cases he emphasizes his own doubts by calling them "presumptively of traumatic origin." In fact, the previous histories was stated "not known"; and at operation 40 of the cases showed positive evidences of former disease, and the remaining 10 were "not noted." His final opinion is clearly shown in the following concise but comprehensive statement of both phases of the question:

"A severe muscular strain may produce a lesion in a diseased appendix or one containing

a fecal concretion"—but "no case has as yet appeared in which it has been shown that an injury *ab extero* has produced an appendicitis in a previously normal appendix."

Coughing, lifting, blows on the right abdomen, have been cited as being primary causes because symptoms became manifest at once without any previous history of appendiceal trouble.

Capelle affirms that the surgery of abdominal injuries shows only two types of trauma, bursting and crushing, and contends that trauma cannot produce an inflammation in a hitherto normal appendix.

Sprengel, Deaver and Da Costa state unequivocally "there has never been a case of traumatic appendicitis scientifically proved."

No case of direct injury to the appendix has been authenticated. Moorehead, in his masterful work on "Traumatic Surgery," clarifies and simplifies the question so satisfactorily that I will quote from him in conclusion. In substance he says:

"This contention is practically limited to medico-legal exigencies, and it is discussed here with that in view, and not because it is clinically even an admitted etiological factor.

"I do not know of any form of external violence capable of producing it in a healthy appendix.

"That abscess formation or a gangrenous process is aided or abetted by external violence, I do not believe.

"If external violence is to play any causative part whatever the following factors must be in evidence:

"(a) The trauma must be directly over the appendiceal region and there must be external evidences of injury.

"(b) The onset of symptoms must be prompt.

"(c) The attack must be the first that ever occurred in the patient.

"(d) There must be no preceding history of 'indigestion,' 'biliousness,' 'colic,' 'ptomaine poisoning,' etc., for any of these often actually mean appendicitis.

"(e) At operation evidence of appendicitis *de novo* must be verified."

Physicians or surgeons who get upon the witness stand, as did those in the cases referred to at the beginning of this paper, should be confronted with this array of authorities to show to the jury the uninformed or the unconscientious doctor.

REFERENCES.

- Bruening, F.—Die Traumatische Blinddarmentzuendung, 1910, p. 281.
- DeForest, Henry P.—N. Y. Med. Jour., Sept. 15, 1917.
- Gobrecht, Louis—De l'Appendicite Grippale, 1919.
- Capelle, L.—In Garre, Kuttner u. Leser's Handbuch der Praktische Chirurgie, 1923, p. 445.
- Kelly, Howard A.—Appendicitis, 1909, pp. 483-486.
- Keen and DaCosta—Surgery, Vol. 4, 1908, p. 736.
- Moschkovitz, Eli—Annals of Surgery, June, 1916.
- Ludington, Nelson A.—Factors in the Etiology of Traumatic Appendicitis, J. A. M. A., May 19, 1923.
- Nothnagel, Hermann—Krankheiten des Blinddarmes u. Bauchfels, 1904, p. 842.
- Sprengel—Deutsches Med. Wochenschrift, 1911, p. 238.
- Osler, Sir William—Practice of Medicine, 1899, p. 534.
- Rothman, Emil D.—The abdominal Tonsil, Intern. Jour. of Surgery, March, 1924, p. 93.
- Moorehead, John J.—Traumatic Surgery, 1921, pp. 735-737.

BRONCHOSCOPIC TREATMENT OF A LUNG ABSCESS IN ONE OF ADVANCED YEARS

WILLIAM JEROME KNAUER, M. D.,
Jacksonville, Florida.

The reason for presenting this case is that it illustrates with what impunity bronchoscopic treatment of lung abscess may be instituted when old age and other conditions are a factor.

REPORT OF CASE

J. R. W., a man, aged 71, was referred to me on April 14, 1924, with a diagnosis of lung abscess of the upper lobe of the right lung, complicated by a dilatation of the arch and descending aorta and diabetes. (X-ray corroborated the lung abscess and dilated aorta.) Following an attack of influenza in March, 1924, the patient began coughing up about two ounces of pus a day. This gradually increased until at the time he was referred to me he was coughing up about six ounces a day and running a septic temperature. This condition, as stated before, was complicated by diabetes and a dilated aorta, and an age of 71. The recent attack of influenza had weakened him considerably. The question that presented itself was whether the patient would stand a bronchoscopic irrigation or not. He was told of the probable risks and decided to have the treatment. I gave him four bronchoscopic irrigations at weekly intervals beginning April 14, 1924. After the third treatment he ceased coughing up any pus and at the fourth treatment

the bronchoscope revealed the abscessed portion of the lung in a state of repair, and it was decided to discontinue treatment. Two weeks later X-ray and lung mapping of the affected portion of the lung showed it to be in a state of repair. The

patient has returned to my office at monthly intervals and to date, eight months since his last treatment, he has had no recurrence of symptoms and has gained in weight and strength.

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ASSOCIATION NEWS

At the annual meeting of the Hillsboro County Medical Society, held December 2, 1924, the following members were elected to the offices mentioned for the ensuing year: President, Dr. M. R. Winton; vice-president, Dr. E. W. Bitzer; secretary, Dr. Blackburn W. Lowry; censor, Dr. Sheldon Stringer. Delegates to State Association: Dr. J. C. Dickinson, Dr. Jno. S. Helms, Dr. C. R. Marney, and Dr. H. Mason Smith.

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REVIEW FROM CURRENT LITERATURE

CARCINOMA OF LARYNX.

Some Observation on the Radiation Treatment of Carcinoma of the Larynx, by Henry K. Pancoast, M. D., Philadelphia, Pa., Amer. Jour. of Roentgenology and Radium Therapy, Vol. XII, No. 3, Sept., 1924, p. 217.

Study of case reports and end results shows an appalling lack of cure and recurrence is the rule. Surgery offers the best outlook in cases that can be fully extirpated even to complete removal of the larynx. Radiation offers with tracheotomy palliative benefit and should be used.

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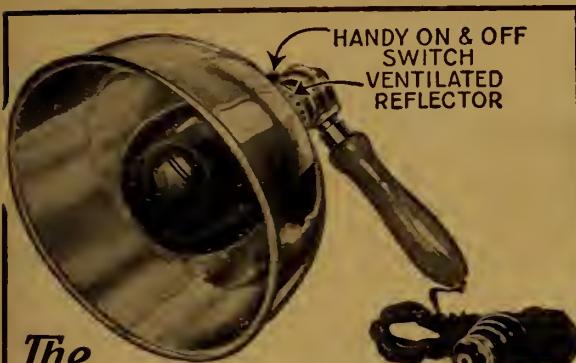
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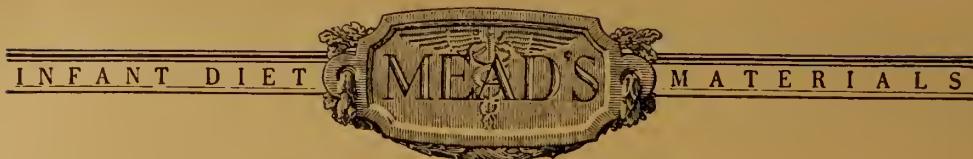
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ORIGINAL ARTICLES

THE CLINICAL RECOGNITION OF THE CARDIAC IRREGULARITIES*

HERMAN H. HARRIS, M. D.,
Jacksonville, Florida.

The advance in the past ten years in the science of cardiology has probably been greater than in any other branch of medicine. The introduction of the electro-cardiograph and the polygraph has made this accurate study and detailed analysis of the cardiac irregularities possible.

We have been compelled, in view of present known facts and ever-accumulating knowledge, to radically change, and in many instances entirely discard, our older ideas of heart failure.

To quote Thomas Lewis, "Recent study has done much more than lead to an accurate classification of the cardiac irregularities; it has thrown most of the major conceptions of heart disease into a melting pot, from which some have issued transformed and from which others will never emerge."

Familiarity with the heart's mechanism in health and disease is a first essential to a correct diagnosis and an effective therapy. Judging by present-day standards of accuracy, those who do not possess this familiarity are not competent to deal with cardiac patients. It is not sufficient that a patient's heart action is observed to be irregular, rapid or slow, but if possible a definite diagnosis of the arrhythmia should be made, for upon this rational therapy is based, and by this an accurate prognosis is made possible.

The writer believes that a knowledge of the mechanism of the heart's action in health and disease makes it possible to arrive at a correct diagnosis by the usual methods of physical examination and, with certain rather infrequent exceptions, makes the employment of the highly technical and mechanical devices now in use unnecessary.

You will pardon me if I take a few seconds for a short review of some of the newer facts of cardiac anatomy and physiology.

We have here a rather rough drawing attempting to show some of the more important structures of the heart which are concerned in the production of the cardiac cycle in health and disease. You will notice that the walls of the inferior vena cava, right auricle and right ventricle have been partially removed to expose the septa. The sino-auricular node or pacemaker of the heart is situated at the upper and anterior end of the sulcus terminalis (which is at the juncture of the superior vena cava, inferior vena cava and right auricle). The orderly rhythm of the whole heart takes its origin in this node. It must, however, be stated that in disease, other portions of the heart's musculature may become more irritable than the sinus node and may usurp its function, thereby giving rise to disordered rhythm. You will see here that the gavi enters the heart at this point and is the inhibitor of this node. The contraction wave extends outward from this point and an orderly contraction of the muscle fibers of the auricle results. When the contraction wave has reached this point, the auriculo-ventricular node, which is situated in the interventricular septum, it takes up the contraction wave and transmits it through the auriculo-ventricular bundle, represented here. This bundle divides and sends a branch to the right and left ventricle. The stimulus traveling along these branches reaches the ventricular muscle fibers, causing a coordinate contraction of the ventricular walls.

A few minutes will be taken to discuss in a very brief way the physiology of the heart muscle.

The heart, unlike other organs of the body, is unique in one particular. "It has only one physiological function to perform," namely, the proper and efficient maintenance of circulation. It is a good heart if it performs this function well and a failing heart when it falls short of this requirement. In order that the heart may maintain this function of circulation the tissues composing this organ have been endowed with certain definite attributes. First among these is its inherent power of stimulus production. That is, its tissue has the power of producing a stimulus which can excite the heart to contract. In health

*Read before the Duval County Medical Society at Jacksonville, February, 1925.

this faculty is maintained by the sinus node, but in disease the initial stimulus may arise from any portion of the heart tissue which may become more irritable than the node.

Second, the power of being able to receive a stimulus, that is, excitability.

Third, the heart muscle has the power of conveying a stimulus from fibre to fibre, which we will call conductivity.

Fourth, the power of contracting when stimulated.

Fifth, the power to retain a certain amount of contraction even when the active movement has ceased. That is tonicity. A few words are necessary in explanation of these five qualities of heart muscle fibre. The fibres of the heart, during the resting period, possess power of internally secreting a material which is capable of stimulating the fibres to contract. This material accumulates in the heart cell during a pause in the contraction. When sufficient has been stored to excite the heart to contract, the whole store is used up in causing the contraction. Immediately after the contraction the store again begins to accumulate, until sufficient has been produced to excite the heart to further contraction. This function, in cooperation with other functions of the heart muscle fibre, gives a rhythmical character to its contractions.

The heart muscle depends for its contraction upon its power of receiving a stimulus, that is upon its excitability. Immediately after the heart has been stimulated to contract, the fibres are no longer capable of further stimulation, excitability has disappeared and the heart is in what is called the refractory stage. This excitability begins at once after a contraction is concluded, and increases very rapidly during cardiac diastole.

The function of conductivity is possessed by the heart muscle fibres in a similar way as possessed by nerve fibres. Each muscle fibre has the power of conducting the stimulus to neighboring cells. This function is subject to exhaustion and like every other function of the heart, it is entirely abolished after it has been exercised and returns gradually.

The power of contractility is the most evident of all the functions of the heart, for by this coordinate contractility the circulation is maintained. After a contraction this function is completely exhausted and the power of contraction returns very gradually. This explains the fact that the strength of a contraction is directly pro-

portioned to the length of diastole. The longer the period of cardiac rest the greater the energy stored up in contraction.

Tonicity is a characteristic property of all muscular tissue. The heart muscle likewise possesses this quality and does not relax to its full length during diastole. This is what is meant by heart tone and the recognition of this very important function contributes greatly to an understanding of some of the most significant features of heart failure, that is dilatation.

With this short review of the newer physiology and anatomy of the heart we are prepared to discuss in a brief way the commoner cardiac irregularities.

The first to be considered is sinus arrhythmia.

These are the irregularities of the heart which are produced by interferences with the rhythmic impulses at the seat of their discharge. Any stimulation of the vagus curbs heart action. If the vagus is cut the inhibitory action of the vagus is lost and the heart will usually, in the human subject, rise to a rate of 150 to 160 per minute. The administration of atropine paralyzes the nerve endings of the vagus in the heart and produces the same effect of accelerating heart action. The stimulation of the vagus will cause a slowing of the heart to 50 or 60 per minute, and this condition is not uncommon in increased arterial tension, increased intracranial pressure, pregnancy, jaundice, convalescence from acute fever and, less frequently, other conditions.

Sinus arrhythmia is quite common in young children and is often found persistent in young adults. It is usually manifested by a waxing and waning of the heart action in each respiratory cycle. The pulse becoming faster as the lungs are filled with air and slowing during respiration. The differentiation from other similar arrhythmias is easily made as a rule. Anything that accelerates the heart action will abolish this arrhythmia, such as exercise, atropine, etc. Having the patient to cease breathing for a minute will cause the disappearance of the arrhythmia if it is due to respiration changes.

This condition is of no significance. It is not an abnormal condition and calls for no treatment.

Heart block will be the next condition considered.

It is defined as an abnormal heart mechanism in which there is a delay or failure of the ventricular responses to the atricular impulses.

Heart block occurs at any age. It has been

seen in the newborn and in all ages into the 80's and 90's.

It is much commoner in the male than the female. Heart block, either partial or complete, is usually indicative of widespread changes in the myocardium. Such as chronic inflammation, fibrosis, atrophy, calcification, an fatty degeneration of the tissues and those changes affecting the conducting mechanism of the heart.

The larger portion of chronic heart block is found in degenerative processes due to single or repeated attacks of rheumatic fever or the direct result of syphilis.

Heart block is readily recognized by graphic methods provided by the polygraph and electrocardiograph. However, the recognition of this condition is usually not difficult by the simple observation of pulse rate, regularity and heart sounds. Partial heart block may be inferred when there is a reduplicated first or second sound at the base. The auricular systole gives rise to a definite heart sound, which in health is not heard, as this sound is submerged in the sounds caused by ventricular contraction. When there is a widening of the time interval between the auricular and ventricular contraction, this auricular sound can be heard and carries a reduplication of the first sound at the base. In those cases where the a-c interval is great the auricular systolic sound will be heard in early diastole and causes a reduplication of the second sound.

Single dropped beats are not difficult to detect. If the heart which seems otherwise regular is interrupted by an occasional pause of unusual length, and the examination of the heart at the apex reveals no apex impulses and no sound during this pause, if the pause is not associated regularly with the expiratory phases of respiration, it can be attributed to heart block; you will find that if it is due to heart block the pulse will be accelerated by exercise and the block disappears only to reappear after a short period of rest, when the pulse has become slower again; a whiff of amyl-nitrite will also abolish this type of block. In any patient in whom the pulse rate is between 40 and 50 per minute, a 2 to 1 heart block may be suspected. There are two conditions which might mislead one. Pulsus Alternans; when the weak beat fails to reach the radial artery, the ventricular systole can, however, be heard and felt at the cardiac apex, this condition is extremely rare. The other condition which may confuse one is that of extra systole, in which the

ectopic beat fails to reach the wrist; in this condition premature ventricular contraction can be appreciated at the cardiac apex. If not by palpation, more sure by auscultation. Three to one or four to one heart block may be detected in this same manner.

Complete heart block, that is dissociation of auricle and ventricle, occurs and is due to the same cause only more extreme than that of partial block. In these cases none of the auricular contraction gets through to the ventricle and the ventricle establishes its own rhythm, which is usually regular and about 30 per minute. You may safely conclude that heart rates at 35 or under are cases of complete heart block. There are other signs which are characteristics or pathognomonic of this condition; when we get heart sounds of variability in quality which are constantly changing in character, independent of the respiratory cycle, we have complete heart block. The pulsation of the jugular veins, due to the more rapidly contracting auricle, may be seen and if counted are several times as rapid as the very slow pulse.

Overdosage with digitalis may be the cause of heart block, by its action in lowering the excitability of the auricular ventricular node.

One of the commoner arrhythmias is premature contraction of extra systole.

These are contractions of the heart which disturb the rhythmic sequences by appearing early and in response to impulses newly formed in the musculature of the heart. The recognition of this irregularity of the heart action is in the great majority of cases not difficult by means of auscultation.

Whenever the regular sequence of sounds is interrupted by two short, sharp sounds, followed by a long pause, extra systole may be inferred. There are a few exceptions to this rule. Sometimes the extra systole is so weak that the aortic valve is not lifted and you will hear only one weak sound, which is the first sound of the heart, and in cases where the extra systole is very feeble no sound may be heard, but in probably all cases the apex impulses can be palpated during the long pauses.

The most important of the continuous abnormal rhythms is that which is due to auricular fibrillation. This condition may be defined as a condition in which the auricles fail to contract en masse. The muscle activity of the auricular wall consist-

ing of fibrillary twitching, this is the true delirium cardis of the older writers.

The description of auricular fibrillation as given by Lewis, pictures the condition with such clearness that I wish to use his words: "The pulse is a medley of beats of many sizes, an intimate mingling of changing pauses; now the beats are almost uniform in strength and spacing; now feeble pulsations chase along rapidly; now the pulse is lost; now it returns with increased vigor."

In other words, when a patient presents a rapid and utterly disordered heart action in which there is no rhythmic sequence, the diagnosis may safely be made of auricular fibrillation. Another most reliable sign is that of pulse deficit. In no other pulse irregularity is the discrepancy between the pulse and apex beat so marked or so persistent.

Auricular flutter is a much rarer condition. It is a condition in which the contraction wave follows a circular and never-ending path in the auricle. Their currents being completed at the rate of 240 to 350 per minute. In this condition the auricle as a whole never enjoys a true diastole. Some portion of the musculature is in systole at all times.

The recognition of this condition is somewhat more difficult than that of auricular fibrillation, and the polygraph and electric cardiograph is sometimes necessary to make the diagnosis certain. However, when we find in an elderly subject a regular and accelerated heart action at rates of 120 to 160 per minute, which is notable for its constant rate under all sorts of conditions and tends to persist without apparent cause, such as fever, toxema, hyperthyroids, tuberculosis, etc., is generally the result of auricular flutter.

Pulsus Alternans is a condition in which the ventricle, beating with regular rhythm, expels larger and smaller quantities of blood at alternate contractions. The recognition of this condition, while very difficult without access to graphic methods of study, is in some cases possible from observation of the pulse alone. In a case of renal disease or arteriosclerosis when the pulse tension is high, Cheyne-Stokes breathing perhaps present and the pulse is regular in rhythm, but variable in force so that each alternate beat is strong and each alternate beat is relatively weak, one is dealing with Pulsus Alternans.

It is unfortunate indeed that most instances of Pulsus Alternans cannot be recognized otherwise than by instrumental means, as this grave and

almost always fatal condition possesses a prognostic omen of almost certain reliability.

The writer only in rare instances has been able to clearly recognize the difference in the pulse waves by palpation of the radial impulses. The employment of the Sphygmomanometer in the recognition of alternations of the heart is of great value and should not be overlooked. If in the course of a routine blood pressure determination the pulse suddenly doubles in frequency as the pressure is released from the armlet, and this observation can be checked and rechecked, the same phenomenon appearing at each trial, and if the beats are regularly spaced, regardless of the force, Pulsus Alternans is a certainty. The writer has found this method a very valuable and reliable one in the absence of graphic studies.

Simple paroxysmal tachycardia may be defined as a condition in which, from time to time, the normal mechanism is interrupted by a series of rapid and regular beats, varying in rate from 100 to 220 per minute, the series starting and ending abruptly.

The clinical recognition of this condition, most often, is based on the symptoms given by the patient, as seldom is the abrupt beginning or ending of the series of rapid contractions to be witnessed at the time of observation. The subjective and objective symptoms vary, depending on the length of the attack. The paroxysm may last from a few seconds to two weeks. Those of a few hours' duration being most frequently seen. The very short attacks are often unnoticed by the patient, giving rise to no subjective symptoms, while those of lengthy duration give rise to the usual symptoms of grave heart failure. At the onset the patient feels a sudden sense of discomfort in the precordia and palpitation, nausea and vomiting, together with salivation and diarrhea are common. If the attack should continue precordial pain, dyspnea, cyanosis and engorgement of the neck and face, the patient becomes haggard and restless, the liver enlarges, the heart dilates and signs of visual stasis become marked if the attack continues long. The attack, even when progressing to this degree of cardiac decompensation, ends, as a rule, abruptly and within a few minutes the objective and subjective symptoms disappear and the patient rapidly recovers.

In concluding the writer wishes to state that it is evident that only with a clear understanding of the pulse irregularities is it possible to decide, even in a preliminary way, which are serious;

which interfere with the effective work of the heart and which can be cured or benefited. In many instances an answer to these questions cannot yet be given; however, much is known with remarkable certainty and these facts should be recognized by every physician who ministers to the cardiac patient.

ABDOMINAL PAIN IN LOWER RIGHT QUADRANT

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Pain in the lower right quadrant causes more anxiety today than pain in any other part of the body unless it should be in the region of the heart, not that most of human ills have their origin with pain in the lower right side but because during the last 30 years so much has been said and written about appendicitis and the importance of early diagnosis and removal that a majority of people feel that pain in the lower right quadrant must be due to appendicitis. It is a common thing to be called and upon arrival have the patient state that they have a pain in their right side and think it is appendicitis. Sometimes they are right but often wrong, as many other conditions also cause pain in that region and acute appendicitis does not usually begin with pain at McBurney's point. Among the most important conditions giving pain, chiefly in the lower right quadrant of the abdomen are: Appendicitis, right salpingitis, right ruptured ectopic pregnancy, right ovarian cyst with twisted pedicle, stone in right ureter and diethyls crisis, pericecal tuberculosis, intestinal obstruction about the cecum, psychoneurosis or fear of appendicitis, right lobar pneumonia in children (early). Other conditions which should be kept in mind are: Right inguinal hernia, mucous colitis, prolapsed kidney with stone, dysmenorrhea, etc. However, the ones I shall dwell on are those which are frequently found, the differential diagnosis very important and often impossible without operation.

I will attempt to give the most important symptoms and findings for a differential diagnosis.

ACUTE APPENDICITIS.

History of digestive disturbance or constipation. Onset of acute attack. Sharp pain about umbilicus or right iliac fossa becoming well local-

ized in right lower quadrant within 24 to 36 hours. Pain may be constant with acute exacerbations for a while, but tends to become more of a continual sharp pain. Peristalsis continues for a time, but unless cathartics are given is inhibited in a few hours. Nausea or vomiting comes on soon after the onset of pain. In children vomiting is very severe. Rise in temperature as a rule takes place within the first six hours, but may not go high and may return to normal. Pulse rate is increased more than we would expect by the small amount of fever. The pulse is of a small hard character and usually is 90 or above when pus is forming. Marked tenderness at McBurney's point with rigidity of right rectus muscle is quite constantly found. When the tenderness is most marked at the right mesenteric point (a point 1½ inches to the right of umbilicus) it is likely to be chronic appendix or psychoneurosis. The leucocyte count is elevated and varies with progress of disease. Sodern states that a rise in leucocytes is not so important as an increase in percentage of polymorphonuclear cells. Wilson, of the Mayo Clinic, and Walker, in checking up in the military camps, found the same rule to hold true. They find that if more than 70% are polymorphonuclear cells pus is likely to be present, while a polymorphonuclear cell count below 70% is likely to be present when the trouble is of a catarrhal nature even though the total white cell count is high. Posture of patient often helps as it is quite common to find the right knee drawn up. The abdomen is usually rather flat early and the breathing of a thoracic type. On palpation the induration about the appendix can often be felt, especially in slender people.

CHRONIC APPENDICITIS.

This usually is not of such an alarming nature and we get a history of frequent or constant discomfort in the right iliac fossa and more especially so when the colon is distended. There is seldom any marked rigidity of the abdominal muscles. The appendix is sensitive to pressure. Dr. Freedman, of New York, states that in about 85% of the cases there is an increase in large mononuclear or transitional cells or both with chronic appendicitis which is not found in other abdominal conditions. The X-ray may help to diagnose a chronic appendix.

Treatment of acute appendicitis is immediate operation if seen within the first 24 hours and diagnosis is fairly positive. If for any reason an immediate operation cannot be done some hold it

is proper to give castor oil, provided it can be given within the first 10 hours of onset. Most men feel that it is best to give nothing by mouth and only a small enema under slight pressure per rectum, if anything. Absolute rest in bed with hot water bottle or ice cap over appendix is important. At present there is a strong tendency to use heat instead of cold, but we will not attempt to settle this point because equally good men hold opposite views. If seen after the first 24 to 36 hours and the symptoms are not growing worse, there is a question as to what is the best procedure. In all cases when the general condition grows worse while under observation for four to six hours it is best to operate at any stage. But if they improve it is considered best to wait to see if the attack will subside or the appendix become walled off, as it is not as safe to operate during the second or third day as it is the first or sixth day. If the obsessed appendix has ruptured it is considered best to only insert drainage with the least possible trauma and wait to a later date to have the appendix removed.

Treatment of chronic appendicitis is not always helped by operation. In cases of visceroptosis there is often a low grade of infection involving the ileum, cecum, and colon. In these cases very little benefit is derived by operation. In such cases it is better to use hot fomentations and rest in bed during the most sensitive periods and attempt to correct the visceroptosis. Most cases of chronic appendicitis receive much benefit by operation.

ACUTE SALPONGITIS, RIGHT.

There is usually a history of infection and vaginal discharge preceding the onset of abdominal pain.

Symptoms: Acute pain and tenderness are present over the right ovary and tube. The uterus fixed to a palpable mass. If the tube has ruptured the temperature rises fast to 103-104, the pulse becomes rapid, 120-140, and the patient is in extreme pain. Operation is indicated in all cases of ruptured tube as soon as possible, but if the tube has not ruptured there is a good chance that it will subside under non-surgical care. Rest in bed, hot or cold applications to lower abdomen, etc. I believe a majority of pus tubes come to operation sooner or later, but after the acute symptoms have subsided the pus is practically sterile, so that operation is attended with less danger than during the acute inflammatory stage.

RUPTURED RIGHT TUBAL PREGNANCY.

There is a history of missed menstruation, later on there may be some pain and flowing, but usually nothing to warn the woman of danger until she is seized by a sharp pain in side. Sudden collapse and pallor, subnormal temperature and a rapid pulse, a low hemoglobin and red cell count together with a mild leucocytosis is noted. On pelvic examination a mass can be palpated on the affected side while the uterus is somewhat enlarged. On percussion there is flatness. Treatment is surgical, repair of bleeding vessel, as soon as possible or as soon as the patient has recovered from shock sufficient to permit operation. Many would recover without operation, but others have a second hemorrhage as soon as the blood pressure has partly adjusted itself. It is probably safest to operate after the patient has recovered from shock. Warbasse states that the mortality among patients operated during the acute depression following hemorrhage is about 50% and that the death rate in those who are allowed to react first is 5%, but Deaver holds that it is wrong to wait while bleeding is going on. Perhaps the safest rule would be to wait if the shock seems to be subsiding and operate if growing worse. In a majority of cases I believe the first hemorrhage has stopped before the surgeon sees the case.

RIGHT OVARIAN CYST WITH TWISTED PEDICLE.

This may give a history of palpable mass in the right iliac fossa or the ovarian cyst may have been found on previous examination. Sudden onset of pain in right iliac fossa, pain may intermit. Tenderness and muscular spasm are not usually marked. There may be fever and leucocytosis. On pelvic examination a mass is palpable in the region of the ovary, fluid is often present in the abdomen. Operative treatment is indicated.

RIGHT DIETELS CRISIS OR STONE IN URETER.

Pain may be severe with sudden onset. Tenderness and spasm not so marked as in appendicitis. More tenderness in the region of the right kidney. Usually no fever or leucocytosis. Urine test for blood. Ureteral catheterization and X-ray aid the diagnosis. For stone in right ureter operation is indicated if the stone cannot be passed by relaxation under morphine or dilatation of ureter, also in those cases in which pus appears in the urine and stone still fails to pass.

PERICECAL TUBERCULOSIS. *

The onset is insidious and the pain not usually severe. Tenderness is located at McBurney's or

about the cecum. There may be a palpable mass at the cecum and there may be some rigidity. One usually gets a history of pleurisy or tuberculosis and failing health which helps to make the diagnosis. Treatment is to build up the general health.

INTESTINAL OBSTRUCTION.

May be located in the lower right quadrant. History of previous abdominal operation is important. Onset of pain is sudden and very severe. Nausea is present with partial obstruction and severe vomiting is the rule with complete obstruction. The temperature is normal with partial obstruction and subnormal with complete obstruction for awhile, but may rise later on, due to inflammation. At times the obstruction can be palpated during peristalsis. Enemas do not give good results as a rule and the patient feels that the intestines are paralyzed below obstruction. Cathartics fail to act if they have been taken. The treatment indicated is to operate immediately.

RIGHT INGUINAL HERNIA.

This should always be looked for with pain in right lower quadrant, but is not usually hard to diagnose and the treatment need hardly be mentioned here.

LOBAR PNEUMONIA.

Pneumonia, especially in children, is always to be kept in mind when diagnosing a condition causing pain in the lower right side. Many cases of pneumonia have been operated on for appendicitis. Both give a rise in temperature, increased leucocytosis as well as increased polynuclear percentage. The leucocyte count is usually too high for appendicitis and respiration more rapid. Auscultation will do no harm and may save the child's life as well as save the surgeon lots of embarrassment.

MUCOUS COLITIS.

This condition often gives pain in the lower right quadrant and may give increased temperature with vomiting and a mild leucocytosis. It occurs in neuritic people. The history of the case and an examination of the stool usually makes a diagnosis easy. Abdominal crises of tabes has been mistaken for appendicitis but should not be confused.

Psychoneurosis of fear of appendicitis may simulate appendicitis very closely, but as stated

before, the point of greatest tenderness is at the right mesenteric point instead of at McBurney's. Usually found in neurotic unmarried women. No spasm of muscles on the right side, excepting as the patient holds the abdomen rigid, no increased leucocytosis, with palpable mass.

There are no general rules that always hold true regarding pain in the lower right quadrant, therefore mistakes in diagnosis and treatment are easily made as all of us know from our own experience.

PAIN IN THE RIGHT UPPER QUADRANT

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Pain in this region, like pain in other parts of the varieties are hard to define. It is a difficult the body, varies considerably in character, and matter to get the patient to describe them.

Pains are sensations or discomforts transmitted to the brain by the nerves. They vary from agonizing pains to those hardly perceptible. They may be constant, intermitting, throbbing, cutting, dragging, shooting or a sensation of constriction or distention. They may be produced, increased, diminished or effected by position, occupation, exercise, eating, pressure, cold and heat.

Pains in the right upper quadrant may result from abnormal conditions within this area or may be reflex or referred pain.

Pains from pathology within this quadrant are due to: First, the liver—Cabot's statistics would indicate that cirrhosis and passive congestion are the most frequent causes of pain in this region. These pains are dull and constant. If from passive congestion, exertion increases and rest relieves pain to a certain extent. Carcinoma of liver and abscess of liver produce constant but not necessarily severe pain.

Second, gall stones cause intense paroxysmal pains when occluding a duct.

Third, cholecystitis pains are more constant and less severe than gall stone pains.

Fourth, ulcers or carcinoma of the pyloric end of stomach, another cause for pain in this region, produce pain on eating; while duodenal ulcers are relieved upon eating. They come on at regular intervals following meals.

Fifth, renal stones are responsible for very

severe paroxysmal pains of this area. Pain begins in kidney region in the back and tends to extend forward and downward and involves the genito-urinary organs reflexly.

Pyelitis, ptosis, renal abscess, hydronephrosis and occasionally a high appendix are all responsible for pains in the right upper quadrant also. Pain is invariably found in these organs or tissues involved and is increased on pressure over these organs or tissues.

Referred pains in the right upper quadrant are due to constipation, pylorospasm from appendicitis and other intestinal conditions; to syphilis in form of gastric crises or to constricting sensation around the chest; to pneumonia and pleurisy of right lower lobe and to kidney involvement of opposite side. Referred pains are not affected by local pressure. Bearing in mind these referred pains will prevent many an erroneous diagnosis.

While pain is very unpleasant and even very distressing at times, we should remember that it is of great value as it is one of our best aides in diagnosis. It is also a blessing in disguise, for the patient, revealing to him the encroaching enemy, and warning him to call on the physician or surgeon to arrest the malady before it is too late.

feet of additional red tape in the care of hospital patients. Again, many have noted the remarkable progress of the movement and have attempted to conform dogmatically to its precepts without a thorough understanding of its real intent. Often the conclusion may have been drawn that it was not worth the effort to conform to these requirements solely to satisfy the American College of Surgeons, or to be placed on an approved list. This is not the intent of the Minimum Standard; its real purpose is hospital betterment, not idealistic nor theoretical, but absolute, concrete betterment.

Little need be said concerning the need for adequate laboratory, X-ray and therapeutic facilities—their worth is too well and generally recognized to merit discussion. But in regard to the keeping of records and its close adjunct, staff analysis, there is much to be said (and room for considerable convincing).

It is generally conceded that records are of value in return cases, research work, and from the medico-legal aspect. It is often (and justly) held that the doctors are not able to carry on research work due to strenuous practice and lack of material, and, further, that a brief card with essential information would fill the legal aspect fairly well—not as well as a complete record perhaps—but, nevertheless, the need is not sufficient to demand the extra effort of keeping records. The answer to this is: The greatest benefit from records is obtained before they are committed to shelves in the analysis of cases by the attending physicians.

In an average case the opinions, ideals, etc., regarding a patient, change with the cause of the disease until at the end, the final concept is entirely different from the original; a change so gradual that it has escaped the consciousness of the doctor. It is the purpose of the record to recall the earlier impression.

Gross mistakes are generally quite apparent and their realization definite, but the innumerable chains of trifling errors in technique and diagnosis pass unnoticed, if no record be kept. A homely example is the case of an operation for "gall bladder or appendix"—finding either at operation the doctor is completely satisfied that his diagnosis was 100% correct, whereas, if he had committed himself to one, the finding of the other would bring about a tendency to remedy the small error the next time.

It is not the object of the Standard to criticize

THE PRACTICAL APPLICATION OF THE MINIMUM STANDARD

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The Minimum Standard of the American College of Surgeons has now been in continuous application for over six years, and its success completely assured. However, there are many practical problems which arise in the institutions of smaller size and away from the great medical centers. Some ideas and conceptions of the solution of these problems, gleaned from a survey of 250 smaller hospitals under the auspices of the American College of Surgeons, are herewith presented.

It has often been felt by doctors who have not thoroughly understood the purports of the minimum standard that the proposition was perhaps more idealistic than practical, and that the only advantage gained consisted in several thousand

errors, but to bring about a realization of their occurrence. The doctors themselves regulate and analyze the work done; furthermore, the Standard does not ask that work be done which appears unnecessary in the doctor's judgment; but it does ask that whatever is done be recorded so that doctor and patient may benefit by the knowledge of error or omission. The question is often asked, "Is it necessary to make a complete physical examination on a case of broken finger, to satisfy the Minimum Standard?" The answer here again is: "Do what you believe to be necessary and omit what you believe to be unnecessary, but record whatever you do, so that you and your staff may be able to analyze the work in case things go wrong with the patient." In other words, the doctors are regulating themselves and the College of Surgeons is taking no part in dictating medical service to patients.

Furthermore, if accurate accounts show that an average amount of thorough and efficient medical attention has been given the patient, the college is able, through its approved list of hospitals, to furnish people entering an approved institution a guarantee that therein such will be accorded them. And this guarantee is based on written fact, and not on hearsay nor idle supposition. It is necessary that history, physical examination and provisional diagnosis be recorded within forty-eight (48) hours to show this.

The monthly conference of doctors who have had cases in the hospital is not intended to be for the purpose of discussion of interesting cases, nor of case reports, though these may well be brought up in conjunction, if time and inclination permit; what is asked is that there be an analysis, a business-like review, not of the successes or interesting things, but of the failures, *i. e.*, the deaths and unimproved cases. For this analysis to be successful it must be based on recorded fact; this is not generally accomplished by the presentation of the case by the attending physician. He has not tried to cause the death of his patient, but has done his best to avert it and, so naturally, defends and righteously explains over the facts of the case. He presents his final concept rather than the first impression. To overcome this bit of adverse psychology, the record should be submitted by a record clerk, or the chairman, and discussion called for from among the staff impartially, calling on the attending physician last to close the discussion. Cards which bear the names of the members of the staff may

be drawn to call for discussion. In order for this plan to be successful, each death must be gone over routinely each month; in case there are too many, the record committee will have to sort out the cases for discussion. Each doctor who has had a death should be especially notified of the meeting by letter. With the analytical side of the meeting completed, the remainder of the time—if any—may well be devoted to the usual scientific discussion. The value of autopsies with reports, as an adjunct to analysis, cannot be over-emphasized. The benefit derived from a few such presentations will generally furnish stimulation to further efforts.

Furthermore, the time is not far distant when an unstandardized hospital, which is sued by an individual for malpractice, or lack of care for its patients, will be at a distinct disadvantage in the defense of its suit—particularly as the majority of hospitals become standardized. It is also a well-known fact that nurses prefer to take their training in approved hospitals.

With the definite idea in mind of exactly what the Standard intends to accomplish, another problem arises: "What is the most simple, concise, and efficient methods of conforming to the Standard?" Herewith is presented one concept of an efficient method of so doing:

(1) Suitable and applicable record forms.

It seems definite that the psychological hazard is the biggest obstacle in the way of a successful record department. Slight objections become mountains when coupled with the subconscious hatred of the procedure. So also the tendency to forget them is many times exaggerated; in other words, there seems to be a very definite Freudine complex established in the minds of most doctors in this regard.

A complete record should consist of a careful case history, including identification data, family, past and present history, physical examination, provisional diagnosis, progress notes, laboratory and X-ray reports, consultation reports, a final diagnosis, and a condition on discharge. Any record which contains a complete and logical account of a case is satisfactory, regardless of the form used.

In the Florida East Coast Hospital, at St. Augustine, the forms herewith presented were introduced and have met with approval. It is to be emphasized that the American College of Surgeons has not accepted these forms as a standard,

but have approved several hospitals in which they are used. The ideas were obtained from the Mayo Clinic forms and those of the City Hospital at Thomasville, Ga.

The advantages of the suggested physical examination form are:

(a) It gives an accurate and complete summary of just what has been examined, just what has been found wrong, and what was not examined.

(b) It is simple and concise.

(c) The doctor's writing is devoted to description only of positive findings, which is not nearly as irksome as describing the negative.

(d) The gist of the record stands out at a glance, and other forms may be constructed as desired.

2. A twenty-four-hour check:

Someone (in open hospitals, not a doctor) should be required to examine each current record daily. Each new admittance should be supplied with a history, physical examination, and provisional diagnosis within twenty-four hours, if the guarantee of the Minimum Standard is to mean anything. If this has not been done, a red tag should be attached to the chart; this must be large enough and red enough to break through the doctor's consciousness. The words, "Incomplete Chart," may be printed upon it. The red tag should not be left on more than twenty-four hours, for, if the record has not been completed (after forty-eight hours in all), personal effort of the supervisor must be made to get the chart completed. Failing, it should be referred to a record committee and in turn to the general staff, where it should be decided whether or not the doctors intend to go ahead with the minimum standard; for, if action is not taken on the neglected cases, the red tags soon become a laughing stock and are inefficient in their purpose. This daily check should be a matter of only a few minutes a day in the average hospital of less than 200 bed capacity.

3. Final check before filing:

Each record should contain history, physical examination, provisional diagnosis, progress notes, condition on discharge, final diagnosis, and operative report, if the case has been operated upon. It should never be filed until these have been completed.

4. Operative charts:

Here again, responsibility may be loaded onto

someone who will shoulder it; that is, the operating room supervisor, or the anesthetist, should see that each chart is completed from dictation before the doctor leaves the operating room, preferably while he is closing up. The important thing is to have someone responsible for their being completed in every instance.

5. Staff analysis of records of unimproved cases and of deaths, as outlined above:

Each doctor should mark the charts of the additional cases that he wishes to have brought up at the staff meeting.

In closing, I wish to emphasize that no originality is claimed in the above presentation, but it is hoped that a free discussion of some of the problems encountered in the standardization of hospitals may exert some helpful influence in its general adoption.

PAINS IN THE LEFT ABDOMEN

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Miami, Florida.

In discussing this large subject it will not be my purpose to deal extensively with the conditions which are analogous to those discussed in the previous papers—merely taking time to mention them in the course of discussion, but to devote most of the time allotted my paper to the primary causes of pain in the left abdomen, exclusively, and especially to painful conditions caused by disturbances of the spleen. However, before beginning that portion, I will discuss the other indirect and direct causes of pain.

The Stomach.—Any painful condition of the stomach may cause pain to be felt below the left costal margin. In particular a new growth or an ulcer toward the cardiac end may produce it. Also flatulent distention of the fundus may be a cause, which can be diagnosed by the fact that the pain disappears on the eructation. Also in rare cases of cholelithiasis pain is sometimes referred to the left hypochondrium.

The Left Kidney.—Stones in the left kidney, movable left kidney, perinephric abscesses, renal colic, and pyelitis may be causes of pain in the left hypochondrium just as they have been described in the right.

The Colon.—A new growth in the splenic flexure of the colon, visceroptosis with acute angulation of the splenic flexure, or obstruction in the descending or sigmoid colon may cause pain in the left hypochondrium. In the case of a tumor diagnosis can usually be arrived at by manual palpation; in visceroptosis there is usually a similar falling of the other organs of the abdomen together with the general asthenic picture seen in most of these cases, but finally diagnosed by gastrointestinal series; a new growth in the descending or sigmoid colon may be cause of pain or the drooping of the sigmoid colon alone with its subsequent accumulation of feces may cause a feeling of pain and weight in the left abdomen, usually disappearing after the administration of a few large enemata.

Subdiaphragmatic Abscess.—In this case there will usually be past history of previous gastric trouble or some suppurative condition in the abdomen, most commonly this occurs on the right side. There would be pyrexia and leucocytosis; also usually an abdominal swelling which does not move with respiration; however, it is not unusual to get indications of pleurisy at the base of the corresponding lung. The use of X-ray may help in locating the abscess, but the exploring needle should not be used except when the patient is on the operating table and one is prepared to open the abscess at once if found.

Intercostal Neuralgia.—This is another primary cause of pain on the left side, but has to be differentiated from pleurisy of the diaphragmatic type. In pleurisy a friction sound can usually be obtained in the early cases; however, this is not true after some effusion has taken place; in intercostal neuralgia there will be tender points along the course of the affected intercostal nerves; another helpful point is that in pleurisy if the body is bent toward the well side the pain is increased, in intercostal neuralgia bend the body toward the affected side to increase the pain. Diaphragmatic pleurisy may be very difficult to differentiate from obscure abdominal conditions, especially when the inflammation occurs along the outer edge of the diaphragm when the pain is referred along the course of the dorsal segment to the abdomen; whereas, if the inflammation of the central portion exists then you may expect pain to be referred to the region of the neck.

Herpes Zoster may also cause pain on the left side along the course on the corresponding nerves.

The diagnosis of this is usually cleared up by the appearance of the eruption; however, the pain may persist long after this has disappeared.

Spleen.—Pain due to this organ is either caused by enlargement or the splenomegalies—the intensity varying with the type—or perisplenitis, which is sometimes called capsulitis or capsular splenitis. There is not always the subjective sensation of pain, but in the majority of these cases pain is elicited upon examination with light palpation, hence in the discussion I will deal with the splenomegalies, inflammation, and distention of the capsule in a differential manner.

A movable or wandering spleen, also termed a *floating, dislocated spleen* and *splenoptosis* is very rare and in most instances found in women. It is due to a relaxation and elongation of the suspensory ligament which is connected with the diaphragm, because of increased weight, or traction upon it by neighboring organs and most commonly it occurs in conjunction with general enteroptosis and rarely as the result of traumatism. The symptoms consist of a dragging sensation on one side of the abdomen with backache and recurrent headaches, digestive disorders, lassitudes, and insomnia. Direct interference with neighboring organs through pressure may cause corresponding symptoms. *Torsion* or twisting of the pedicle may bring on alarming phenomena quite suddenly, especially if the torsion is complete. These may include sudden enlargement of the organ, severe local pain, marked pallor, with anemia, fever, uncontrollable vomiting, marked shock, and collapse. The perisplenic tissue may become inflamed when the torsion is incomplete and give considerable local pain.

Acute hyperemia of the spleen occurs in acute toxemias, especially those attending typhoid and typhus fever, septimia, glanders, anthrax, malaria, and less frequently as a result of intoxication by a drug. This may also follow traumas or obstruction by emboli. The symptoms consist principally of the enlargement of the spleen and pain in the splenic region. The pain may be absent and only tenderness on pressure and sensation of weight.

Abscess of the Spleen.—May occur as result of infection by neighboring ulcerative processes, but as a rule this is caused by septic emboli. Also it may occur as a complication of splenic congestion in course of typhoid, malaria and other infectious

fevers. Pain in the splenic region, tenderness locally and the usual symptoms indicating suppurative process—chills, fever, nausea, vomiting, prostration, more or less marked leucocytosis—constitute the picture usually obtained. In most cases enlargement of the spleen may be detected.

Rupture of the spleen is most often caused by *malaria*, although traumatisms and other infectious processes may cause it. The first symptom is abdominal pain followed by severe shock, pallor, faintness, coldness of the extremities, etc. If hemorrhage be very severe the patient may die within an hour. Muscular rigidity is also a very marked early symptom. If the hemorrhage be not so severe, symptoms of the accumulative blood mass together with the shock and pain point clearly to the complications.

Splenomegaly or Chronic Enlarged Spleen.—This is but a symptom of many disorders, but due to the weight and consequent stretching of the capsule in most cases it causes localized pain. Hence I will discuss the principal ones of this class. The *infectious type*—syphilis, tuberculosis, and malaria, are a very common cause of splenomegalia. The individual symptoms of these respective diseases serve to differentiate their origin.

Thrombotic enlargement of the spleen may be caused by thrombosis of the splenic vein, which in turn may be caused by degenerated processes of itself or its radicles or subsequent pressure from the surrounding organs, tumors, etc. A common complication is *infarction of the spleen*. The first sign of infarcts in the majority of cases is a sudden excruciating pain, strictly localized, not radiating, persisting for sometime unmodified, but gradually subsiding in the course of a few days. An infarct of spleen may occur with a few symptoms suggesting ileus or peritonitis, probably a reflex origin. These symptoms may be accomplished by slight temperature and moderate leucocytosis.

Unlike all other splenomagalias, the enlargement from *amyloid degeneration* of the spleen following tuberculosis, syphilis, chronic separative processes, carcinoma, malaria, gout, alcoholisms, etc., is not sensitive to pressure.

Besides the foregoing splenomagalias, others are occasionally encountered. Besides splenic anemia and polycythemia, splenomedullary or myloid leucemia is a frequent cause of very great enlargement of the spleen, the organ often reaching below

and beyond the umbilicus. This causes abdominal pain in the splenic region often due to perisplenitis and to adherence of the enlarged organ to various viscera. It is easily diagnosed by the marked leucocytosis and the other symptoms of leucemia. In *pseudo leucemia or Hodgkins disease*, the spleen is enlarged in a majority of cases but not to the extent observed in leucemia. Hence it is seldom associated with pain, there is a progressive secondary anemia and the enlargement of the lymph glands serve to differentiate it from pernicious anemia and other blood disorders in which the spleen is enlarged. Closely allied to this blood disorder is one described by Banti under the name of "hemolytic" splenomagaly, in which hyperplasia of the organ also enhances its hemolytic activity, probably due to the influence of some undetermined poison. It is characterized by a rapidly progressive anemia, jaundice, without clay-colored stools, urobilinuria and bilirubinuria, and a special hemopoietic reaction of the bone marrow as shown by the presence in the blood of normoblasts, myelocytes, polychromatophilous erythrocytes, and erythrocytes with basophilic granulations. The importance of recognizing this condition lies in the fact that permanent cure may be obtained by means of splenectomy. This condition has to be differentiated from cirrhosis of the liver, which at times also shows enlargement of the spleen; however, the hepatic symptoms usually predominate and the history of alcoholism and tardy initiation of hemorrhages. Also in Hanot's hypertrophic cirrhosis of the liver the large hard and smooth liver, the persistence of jaundice and the prominence of the hepatic symptoms help to differentiate it from Banti's disease.

Parasitic Splenomagaly also occurs and the most common form met with is that due to *hookworm disease*. The profound anemia, together with a great enlarged spleen and dropsy may mislead to a diagnosis of the splenic anemia; however, eosinophilia together with a stool examination will reveal the true identity of the case. Ascarides may also be attended by enlargement of the spleen but differentiated as above.

Also *hydatid or echinococcus cysts* may involve the spleen in about 3% of all cases, these cysts may attain a large size and occur as primary growths in over one-half of the cases.

In a rough way we have scanned over the various causes of pain in the left side, by no

means going into detail, but I trust we have covered it sufficiently thorough in order that individually we may be able to obtain some aid in arriving at diagnosis of the vague conditions with which we daily come in contact. If this paper has been of any assistance in arriving at a conclusion in a single case, I feel that the time spent is well recompensed for.

THE NON-OPERATIVE TREATMENT OF HEMORRHOIDS

For the past fifty years the non-operative treatment of hemorrhoids has been a much-discussed subject, alternately praised and condemned by the profession at large, and is still looked upon by many as dangerous and unsatisfactory, but there is an old saying but a true one nevertheless, "The proof of the pudding is in the eating thereof"; in other words, the efficacy of any line of treatment must be judged by the results obtained thereby.

It is the duty of the physician to relieve and cure his patients by that method that entails a minimum loss of time, danger and suffering.

It matters not whence comes the source of relief, the true physician will select his remedies and adopt methods for the relief and cure of his patients irrespective of schools, pathias or isms, his two great objectives being: First, relief from pain; second, removal of pathology and restoration to normal conditions.

In the year 1871 Mitchell, of Clinton, Illinois, began treating hemorrhoids by injecting them with carbolic acid solution. He made much of the fact and heralded to the world his discovery, advertising his method of painless and permanent cure of hemorrhoids or piles without the use of the knife; later on he sold his formula to anyone who would pay his price and, "a la Abrams," promise secrecy regarding its makeup, with the result that the country was soon deluged with quacks claiming wonderful cures of piles without the use of knife or anesthetic, and as Collier F. Martin, of Philadelphia, states in a paper read before the American Proctologic Society in 1904: "In spite of unscientific and unsurgical methods the results obtained by these quacks were wonderful, and the regular profession found that many patients were being treated and cured by this method. Careful investigations

by Andrews resulted in his publishing in 1876 a number of formulas employed, each one of them having for its base carbolic acid, some of the solutions containing as much as 20 grains to the ounce. It is truly remarkable, considering the class of men engaged in this work and the crude manner in which the treatment was carried out, that there were not more fatal results, the mortality reported being considerably under one-half of 1 per cent, while such complications as hemorrhage, pain, and sloughing aggregated about 3 per cent." According to Tuttle other complications occurred, such as embolism of the liver; dangerous prostration, 12; abscess of the liver, 1; permanent impotence, 1; stricture of the rectum, 2; carbolic acid poisoning, 1; and severe inflammation, 10. As Tuttle truly says: "Any other surgical operation for hemorrhoids in such inexperienced and unscientific hands would have produced a larger mortality and a longer list of accidents."

Andrews in his book, "The Surgery of the Rectum," published in 1902, says: "The use of carbolic acid is still to my mind a legitimate treatment of some cases, but liable to be followed by very disagreeable consequences."

Cripps, in 1884, in his book, "The Diseases of the Rectum and Anus," reaches the same conclusions. Gant says: "Only small piles which bleed freely and are situated above the grasp of the sphincter muscle should be injected."

Kelsey states his objections to the treatment as follows: "Pain, ulceration, marginal abscess, fistula, the impossibility of giving any definite prognosis as to the length of time necessary to effect, or the amount of suffering the treatment will entail, and the fact that the treatment does not result in a radical cure, but that the tumors reappear after two or three years."

The foregoing extract shows that the injection method was taken up and used by some of the foremost proctologists and that some of them are still using formulas with a carbolic acid base.

In 1916 E. H. Terrell, of Richmond, Virginia, caused no little stir in the proctologic fraternity by reading a paper in which he reported the successful treatment and cure of 163 cases of hemorrhoids by the injection of quinine and urea, which brought about much discussion by such men as Collier Martin, of Philadelphia; A. B. Graham, of Indianapolis, Ind.; Lewis J. Herschman, of

Detroit; Alfred J. Zobel of San Francisco; J. Rawson Pennington, of Chicago, Ill.; many of whom are now using quinine and urea in the treatment of selected cases of hemorrhoids. It was my good fortune to have known Terrell for several years, before he read or brought the attention of the American Proctologic Society to the value of quinine and urea in the nonoperative treatment of hemorrhoids and to have been privileged to assist him in some of his experimental work along this line, and since that time I have treated at least 80 per cent of my hemorrhoidal cases successfully with quinine and urea, and it is to this method of treatment that I shall confine my remarks.

When quinine and urea is introduced into the tissues a fibrous exudate is thrown off from the adjacent blood-vessels and this exudate in turn impinges upon the lumen of the vessels, causing a retardation of the blood-current at that point. If the exudate is too great or if the vessels are sufficiently diseased a sloughing will be the result, so that a proper strength solution of quinine and urea, a solution short of complete strangulation and sloughing, must be decided upon before a cure can be brought about.

It is my custom to use solutions of 5 to 10 per cent, judging each individual case according to the length of time the hemorrhoids have existed and the amount of fibrous tissue present. I have never had any trouble from swelling, ulceration, sloughing, or infection following the use of quinine and urea which I have used in 80 per cent of my hemorrhoidal cases covering a period over eight years.

I make my injection deep into the lumen of the pile, so that the fluid does not get into the mucous membrane. The following technique is strictly adhered to: The patient is instructed to take a simple enema a couple of hours before coming to the office. Upon his arrival he is placed on the operating table in the Sims position; the anal region is thoroughly cleansed with soap and water, dried and wiped off with alcohol; if hemorrhoids are protruding they are cleansed and gently pushed back into place; a well-lubricated Martin anoscope or Brinkerhoff fenestrated speculum is then introduced. (My choice of lubricants is Ky. as it does not smear or grease up the field of action as vaseline or other greases are apt to do.) The speculum should be gently passed its full length into the anal canal and then

slowly withdrawn, until the hemorrhoids are brought into view. I then select the largest tumor and wipe its surface with a 50 per cent solution of iodine and alcohol; then using a 16 minum Luer syringe (tubercular) fitted with a short fine needle, I plunge the needle into the body of the pile near its upper border in the medium line, and inject enough of the solution to slightly distend the pile, holding the needle in situ for two or three minutes until the color of the pile becomes a grayish white. I do this also to prevent bleeding at the site of puncture, for if the needle is withdrawn too soon a spurting hemorrhage takes place and part of the injected fluid escapes along with the blood. The point of insertion is again wiped over with the iodine and alcohol solution, speculum withdrawn and patient allowed to rest on table for about five minutes, after which he is dismissed to go about his regular business. No pain, no anesthetics, no discomfort, and a well-pleased patient leaves the office with instructions to report again in two days for further treatment. At the next visit another hemorrhoid is treated and so on until the tumors in all quadrants have received the solution. Three treatments of each hemorrhoid usually completes the case, the entire time of treatment covering a period of about four weeks. Occasionally a case will take a little longer; many cases are cured by two injections, but in the worst cases a symptomatic cure will take place in four or five days. The treatment should be kept up until all evidence of hemorrhoids has disappeared.

Some patients complain of a slight bearing down sensation for an hour or two after each treatment. During the course of treatment the patient is allowed to go about his daily duties. All hemorrhage usually ceases from the time of the first treatment. Further prolapse is very unusual, painful defecation and habitual constipation is relieved, patient usually reporting a large, soft, easily passed stool the morning following first treatment. This method of treatment is applicable and will be successful only in cases of uncomplicated internal hemorrhoids.

Don't try it on inflamed or strangulated hemorrhoids; first reduce the inflammation and strangulation. Don't use it and expect to get results on external thrombotic piles or inflamed skin tags or sentinel piles, and always make your injection at the highest point possible above Hilton's white line, and do not under any circumstances inject into a prolapsed hemorrhoid.

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THE PRESIDENT'S ADDRESS*

JOHN C. VINSON, M. D.,
Tampa, Florida.

Gentlemen of the Florida Medical Association:

I desire above everything else to thank you for the opportunity to serve as your President. The honor on this occasion is a double one. While I do not reside in St. Petersburg, its close proximity to Tampa makes me feel as if I were presiding in my native town and the high standard of the personnel of its medical profession leaves me unashamed.

This meeting, I hope, will be marked by some radical changes for the ensuing years. There is progress in the state of Florida, the like of which has never been equalled. We are selling to the world today our wonderfully endowed climate and promising to thousands a health-giving sojourn. A fulfillment of this promise rests wholly upon the medical profession. I presume that this body of men is familiar with the long line of disasters that has previously devastated the state.

The Florida Medical Association is contributing but poorly to the possibilities of our state.

Recommendations to Individual Members

The medical men within the state must recognize their responsibilities to the community.

It is incumbent upon every doctor to watch his community and to see that proper sanitary measures are invoked.

To cooperate with the local and state health officers in carrying out their programs, it is highly important, not only for the individual doctor, but for the medical profession as a whole, that the communities be the recipients of honest medical attention.

This can only be obtained by cooperation in action as well as spirit among the doctors in each community. There is no community in the state of Florida where more than one doctor resides but would be benefited from every standpoint if served by a cooperative medical body. Not necessarily a group of men who have for

their sole purpose a division of work, but men grouped together having as their aim a more comprehensive study of each individual responsibility. Only from such cooperative medical bodies can be evolved means and measures for the ultimate prevention of sickness. I can assure you that it is a goal, the striving for which offers the most idealistic endeavor that every stimulated human mind.

Recommendations to the Society

There should be a movement of the Florida Medical Association having for its purpose a better state-wide representation of the doctors who are entitled to its privileges. There is an unappreciative attitude towards the Florida Medical Association by a large number of doctors within the state. Their attitude quite well reflects the negligent attitude of our Association. We can hardly expect the medical men within the state of Florida to be attracted merely by form.

The Society should dedicate its services to a well-defined program having for its ultimate goal the prevention of illness in the state of Florida. Inducements should be made by this Association so that research organizations of the higher class would establish adequate laboratories so that they might contribute towards the solution of our problems.

I would call to your attention that Florida is visited yearly by residents from every part of the globe and that among these visitors there is represented a large number in search of health. The possibilities for the dissemination of disease is eminent unless we cooperate in the protection of our state.

This is highly necessary for it has been conclusively demonstrated that the people within the state are not particularly interested. As proof of this assertion I would call to your attention the fact that the legislative body of this state appropriates the same amount of money for tick eradication among the hogs and cows as it does

*Delivered before the Fifty-second Annual Meeting of the Florida Medical Association, held at St. Petersburg, May 19, 20, 1925.

for the prevention of every disease among its human population.

Go home and read the statistics that show the ratio of the hog and cow to human beings in this state. It will probably surprise you to know the value of human life in the eyes of our legislators.

Your Medical Journal reflects the intellectual standing of this Association. The State Medical Journal should function in two very profitable ways. A medium through which scientific knowledge can be disseminated among the profession, and means whereby the public can be educated along hygienic lines. I would recommend that the journal be placed upon the highest plane or immediately suspended.

Now, gentlemen, there really was no excuse in the beginning for the practice of medicine. From the weird measures that were inaugurated in the dawning period of the history of man, there has gradually evolved a really essential field for human endeavor. Because some early cave man

bristling with an unusual ego dipped his grimy hands into the wheels of nature offers no valid reason today for the inefficient service in the administration to the sick. We have not entirely unloosed the shackles of heritage that our queer predecessors endowed us with and as a result our position should be felt as a satisfaction one.

The pursuit of scientific knowledge has been grossly misunderstood. There seems to be a serious misinterpretation as to the aims of science so that today we see movements being fostered that would have a far better setting in medieval times. Science is that branch of human endeavor that has for its goal the ultimate truth.

You gentlemen are necessarily scientific men and there need be no apology for the record of the past nor the hope for the future, and I now urge that we dedicate ourselves anew to the science and profession of medicine, and to the upbuilding of the dignity, the usefulness and the honor of the Florida State Medical Association.



P R O C E E D I N G S
of the
FIFTY-SECOND ANNUAL MEETING
of the
FLORIDA MEDICAL ASSOCIATION
HELD AT ST. PETERSBURG, FLORIDA
May 19th and 20th, 1925

The Fifty-second Annual Meeting of the Florida Medical Association was called to order at 9:30 a. m., May 19, 1925, in the auditorium of the Princess Martha Hotel, St. Petersburg, by Dr. Carl Williams, President of the Pinellas Medical Society. The invocation was made by the Rev. Kerrison Juniper, D. D. Dr. Williams then made the announcements of the entertainment features of the meeting and turned the gavel over to Dr. John C. Vinson of Tampa, President of the Association, who delivered his address.*

The meeting then adjourned. Immediately following which Dr. H. Mason Smith of Tampa, Chairman of the Scientific Program Committee, opened the scientific session.

Scientific Session

Dr. R. Beverley Tucker of Richmond, Virginia, was introduced to the assemblage by the Chairman as the guest of honor and delivered a most interesting and comprehensive address entitled, "Encephalitis." A rising vote of thanks was tendered Dr. Tucker at the conclusion of his address.

The following papers were then read and discussed:

On the Treatments of Colds, M. A. Lischkoff, Pensacola.

Cancer of Lip, Resulting Deformity, Plastic Repair, John E. Boyd, Jacksonville.

Case Reports of Plastic Repair of Mutilating Operations of Lip and Cheek Following Removal of Carcinoma. F. A. Copp, Jacksonville.

GENERAL MEETING OF THE FLORIDA MEDICAL ASSOCIATION

The general meeting of the Florida Medical Association was held May 19, 1925, in the auditorium of the Hotel Princess Martha, St. Petersburg, Fla., at 12:15 p. m.

Meeting called to order by Dr. John C. Vinson, President.

The following report was made by the Secretary-Treasurer and Editor, Dr. Graham E. Henson. A motion was then made to accept the report and it was seconded and carried:

To the President and Members of the Florida Medical Association, in Annual Session at St. Petersburg, Florida:

GENTLEMEN: In submitting my annual report, as Secretary-Editor of the Florida Medical Association, in general terms it can be stated that the prosperity of the entire state is reflected in the affairs of our Association. At the last annual session, there were at that time 536 paid members. At the present time there are 645 paid memberships, with a total membership roll in excess of 800. While it is recognized that our membership has not yet reached the point that it should, the last year has shown a greater increase than that of any preceding year.

The Journal of the Florida Medical Association, as has been stated in many previous reports, has long past reached the experimental stage, in

*The President's address will be found in another column of this issue of THE JOURNAL.

so far as its commercial success is concerned. During the year 1923-24, the average monthly earnings of the JOURNAL were \$206.46, as compared with an average monthly earning for the period 1924-25 of \$253.36, this showing a monthly increase in the earning power of the JOURNAL of \$36.90, or slightly in excess of 20 per cent.

The scientific success of the JOURNAL is dependent entirely on the support that is given to it by the members of the Florida profession. At the present time, we are two months behind with the publication of issues, this being due entirely to the fact that we have practically no material on hand for publication. This is not as discouraging as might appear on the face, and the situation may be briefly summed as follows: Prior to the 1924 meeting, the Scientific Committee was in the habit of securing anything from 40 to 60 papers to be read or presented at the annual session. As the Association grew, this naturally produced confusion at the meetings, finally resulting in the Scientific Committee limiting the papers to less than half that number. We have received more papers for publication in the past year from the county societies than ever before. We are still short of the required number to publish and maintain the JOURNAL in its present form.

For the past year or so, there has been some agitation as to the advisability and practicability of the Association employing a full-time secretary, to look after the affairs of the Association and to edit the JOURNAL. This year the matter has taken on a concrete shape, your Executive Committee having given the matter serious consideration. Some three weeks ago, your Secretary was in conference with Dr. John S. Helms, Chairman of the Executive Committee, and discussed with him the practicability and feasibility of the suggestion. It is believed that with additional data your Secretary supplied to the Executive Committee, there is little doubt in the minds of the committee that the scheme could be made a profitable one for organized medicine in the State of Florida. It will involve, of course, an increase in State dues, probably not in excess of ten dollars a year. A further source of income to the association, should we have a full-time man, would be the matter of building up a commercial exhibit at our annual meetings. Every year, from 10 to 20 national advertisers write requesting exhibit space. In a very short time, it is

believed that the Association could net a thousand dollars a year from such an enterprise.

The general scheme of employing a full-time secretary-editor has my hearty approval, provided it can be shown to be a feasible and practical solution of our present problems.

All of which is respectfully submitted.

GRAHAM E. HENSON.

Dr. John C. Vinson,

President, Florida Medical Association,
Tampa, Florida.

DEAR SIR: We have examined the records submitted to us by Dr. Graham E. Henson, the Treasurer of your Association, and enclose with this statements which, we believe, correctly set forth the business from April 30, 1924, to May 12, 1925.

The transactions are recorded in a cash book which shows all moneys received by the Treasurer and all payments made by him, each of such payments being supported by a properly endorsed paid bank cheque.

The collections recorded in the cash book were checked against the carbons of receipts issued. Beyond this the collections have not been verified.

We are glad to find that excellent receipt books have been installed and properly kept by the Treasurer since the date of our last examination.

Yours faithfully,

MUCKLOW & FORD,
Certified Public Accountants.
By George H. Ford, C. P. A.,
Member American Institute of Accountants.

WE CERTIFY: That we have examined the cash book, the paid bank cheques for the period beginning April 30, 1924, to May 12, 1925, submitted to us by the Treasurer of the Florida Medical Association;

That all disbursements made by the Treasurer are supported by properly endorsed bank cheques;

That the balance in the Florida National Bank to the credit of the Florida Medical Association on the 12th day of May, 1925, was \$1,125.26;

That, in our opinion, the accompanying statements are correct.

MUCKLOW & FORD,
Certified Public Accountants.
By George H. Ford, C. P. A.,
Member American Institute of Accountants.

<i>Consolidated Cash Statement for the Year Ending May 12, 1925.</i>		<i>Memorandum</i>
<i>Receipts.</i>		Total expenses
Cash in bank April 30, 1924:		Total earnings
General Fund	\$ 224.44	\$ 3,814.73
Journal	330.91	2,280.41
Dues collected, per Exhibit B.....	\$ 3,225.00	
Earnings from advertising pages, per Exhibit C.....	2,280.41	
Total Receipts	\$ 5,505.41	Net cost to the Florida Medical As- sociation for the year.....
Total cash to be accounted for....	\$ 6,060.76	\$ 1,534.32
<i>Disbursements.</i>		<i>Assets</i>
For expenses, General Fund, per Exhibit B	\$ 1,120.77	Furniture
For expenses, Journal, per Ex- hibit C	3,814.73	Cash on hand
Total Disbursements	\$ 4,935.50	
Balance in bank May 12, 1925....	\$ 1,125.26	<i>Liabilities.</i>
	Exhibit A.	None
<i>Cash Statement—General Fund, for Year Ending May 12, 1925.</i>		Exhibit C.
<i>Receipts.</i>		<i>List of Dues Paid by Counties, Etc.</i>
Cash on hand, per report May 1, 1924	\$ 224.44	Alachua
Dues collected—Arrears.....	\$ 840.00	Bay
Dues collected—Current, per Ex- hibit D.	\$2,385.00	Columbia
Total cash to be accounted for...	\$3,449.44	Dade
<i>Disbursements.</i>		Duval
Paid for flowers	\$ 20.93	Escambia
Paid for postage	20.00	Hillsboro
Paid for printing	255.91	Lake
Salary—Secretary	600.00	Leon-Gadsden
Salary—Stenographer	156.82	Manatee
Stationery	18.60	Marion
Telephone	7.71	Orange
Accountants' fees	15.00	Palm Beach
Traveling Expense	8.30	Pinellas
Bond of Treasurer	17.50	Polk
Total Expenses	\$ 1,120.77	Taylor
Transferred to "Journal" account..	1,500.00	Sarasota
Total Disbursements	\$ 2,620.77	St. Johns
Balance, cash in bank.....	\$ 828.67	St. Lucie
	Exhibit B.	Walton
<i>Cash Statement—Journal for Year Ending May 12, 1925</i>		Individuals
<i>Receipts</i>		\$ 76.00
Cash on hand, per report May 1, 1924	\$ 330.91	
Earnings from advertising pages....	\$2,280.41	\$3,225.00
Cash received from the Florida Med- ical Association, General Fund....	1,500.00	Exhibit D.
Total cash to be accounted for....	\$4,111.32	
<i>Disbursements.</i>		
Paid commissions on advertising....	\$ 185.98	
Paid discounts allowed on advertising	39.93	
Paid postage	22.36	
Paid printing	2,928.54	
Paid salary—Editor	600.00	
Paid telephone	10.65	
Paid for electro plates.....	27.27	
Total expenditures	\$3,814.73	
Balance, cash on hand.....	\$ 296.59	

Dr. John S. Helms, as Chairman of the Executive Committee, submitted the following report:

MR. PRESIDENT AND CHAIRMAN: The Executive Committee have not had very many matters referred to them during this year. We had a meeting, I believe, on the 29th of March in Daytona. The main subject for consideration at that time was the question which was referred to by the Secretary in his report—the employment of a whole-time Secretary. This question, at this time, seems to be uppermost in the minds of the majority of the membership of this association, and is a very important subject. The plan offered by the Executive Committee or outlined by the Executive Committee at that time, which it is my duty to report to you now, briefly is about this: That the Association raise the dues to such amount as the Association may require to successfully finance the employment of a full-time Secretary and Managing Editor of the JOURNAL. We have figured that in all probability the raising of the dues to \$10.00 per annum would bring us the necessary amount to conduct and edit the JOURNAL and employ a full-time Secretary. Now, it was not the question solely of employing a full-

time Secretary, but the possible employing of a lay Secretary.

We have found that some state organizations have employed lay Secretaries with success, including the states of Ohio and Wisconsin. Under this plan, the Secretary would not only be Secretary of the association, but would be Secretary to all the important committees of the association, and also the Managing Editor of the JOURNAL—not the editor of the JOURNAL insofar as the scientific side of it is concerned, but its Managing Editor. Also, he would act as the executive for the important committees that might be appointed under the Constitution and By-laws by the President, or elected by the House of Delegates.

The question of the Secretary was the pivotal point of the discussion. The idea of a Managing Editor we believe would put the association JOURNAL on the proper sort of footing to make it a greater success probably than it is now.

The idea of appointing or having appointed a publication committee either by the President or elected by the House of Delegates was another one of the ideas which was incorporated in this plan, and which would be necessary if we had a whole-time lay Secretary. The Editorial Board or Publication Committee, under this plan, would have charge and be responsible for the publication of the JOURNAL from a scientific standpoint.

This about covers the plan, I think, that we outlined at Daytona for presentation to you here at this time.

The question of revision of the Constitution and By-laws in such a way that this plan might be made possible, will be a matter for consideration. It seems to me that the Constitution and By-laws at present in operation does not authorize this change. In all probability it will be necessary to revise the entire Constitution and By-laws, and I think it would be an important matter, and I would suggest the idea, if the presentation of this plan meets with your approval, the appointing of a Committee on Revision of the Constitution and By-laws and having the whole Constitution and By-laws brought up to date.

That is about all the important matters that we had for consideration during the year, and I will present this as our report.

JOHN S. HELMS, M.D.

Motion by Dr. Adamson: "I move that the Executive Committee's report be accepted and that the Chair appoint a committee of three to consider the question of revising the Constitu-

tion of the Florida Medical Association, incorporating the plan as promulgated by the Chairman of the Executive Committee." Seconded.

Motion by Dr. McEwan to refer the matter of the report to the House of Delegates.

Substitute motion offered by Dr. Lischkoff: That the report of the Executive Committee be accepted with the recommendation that it be put before the House of Delegates for their consideration.

Dr. Adamson's original motion again presented.

Seconded and carried.

Report of Committee on Legislative and Public Policy, W. M. Rowlett, Chairman:

We felt this year that we had a hard road ahead of us as it had been reported from numerous sources that the reciprocity bill that had been drawn was sure of passage. The members of the Committee, before the Legislature went into session, went over the state pretty thoroughly. I personally visited a number of county organizations, interviewed a number of Representatives, and a number of these places that we visited, Brooksville, Lakeland, and others, the county organizations held a banquet and invited their Representative to be present, and then laid the law down to them, and without a single exception they came back with the assurance that they would vote any way that their county medical organization so desired. It is reported that after the Legislature met one or two bills for reciprocity were introduced, but that the unanimous vote was opposed to them and the bills were withdrawn.

A very strong committee, headed by Dr. E. B. Milam, a member of the Legislative Committee, went to Tallahassee from Jacksonville and while the opportunity was right succeeded in doing away with the chances of the reciprocity bill being reintroduced this year.

A bill providing for a Naturopathic Examining Board has been introduced in the House twice, and each time defeated. They are now flooding the House of Representatives as well as the Senate with literature with the hope of yet getting this bill through. So, I wish that each one of you, when you go home, would make it your personal obligation to write your Representative and tell him how to vote on this Naturopath bill. Your Representative will do just as you ask him to.

I am more convinced than ever, after my several years' experience with the State Board, that the medical profession possesses a favorable outlook in the political field of our state for primary assistance. Your Senators and your Representatives, 99 times out of 100, will do as your county organization requests them. Take advantage of this. Meet the man who is a candidate; elect the man you want, and you will have nothing to fear in the future, and conditions will continue to improve.

We are still having a little trouble with a few of the old bogus diplomas and licenses bobbing up. But, as I have said, before these are found out, it behooves every county organization to have a Foreign Legislative Committee to go thoroughly into the qualifications and credentials of every man coming into that county who has not passed the State Board. They have not the power and authority to run around over the state and prosecute these imposters—their duties are to examine the credentials and fitness of these applicants, and to keep a record for the use of their county authorities and prosecuting attorney, and to so furnish these.

Motion by Dr. Henson to accept Dr. Rowlett's report and have it spread on the minutes of the association. Seconded and carried.

Report of Committee on Clinics, Dr. Cason, Chairman. Report read by Dr. Henson.

Motion by Dr. McGinnis that this report be accepted by the association and published and the committee continued.

Seconded and carried, with the following addition: That a copy of these resolutions be sent to every public health organization in the state.

Motion to adjourn.

SCIENTIFIC SESSION

The Scientific Session was called to order by Dr. Shaler Richardson at 2 p. m. and the following papers were read and discussed:

"Report of Case of Imperforate Hymen with Retained Menstrual Fluid, Resulting in Retention of Urine," H. E. Palmer, Tallahassee.

"Rupture of the Liver and Its Complications," George E. W. Hardy, Tampa.

"Value and Limitation of X-Ray in Gastro-Intestinal Study," William J. Buck, Jacksonville.

"The X-Ray Diagnosis of Gall Bladder Disease: Cholecystrography After Intravenous Dye Infection," J. A. Beals, Jacksonville.

- "The Gall Bladder," T. Z. Cason, Jacksonville.
- "Surgical Treatment of Gall Bladder Disease," C. F. Sayles, Miami.
- "Post-Operative Care of Gall Bladder Operations," R. O. Lyell, Miami.
- "An Unusual Case of Intestinal Obstruction," L. J. Efird, Tampa.

MEETING OF THE HOUSE OF DELEGATES

<i>County</i>	<i>Delegate</i>
Alachua.....	Dr. J. Maxey Dell, Gainesville
Columbia.....	Dr. L. M. Anderson, Lake City
Dade.....	Dr. W. C. Jones, Miami Dr. N. J. Flipsi, Miami Dr. J. A. Simmons, Miami Dr. H. M. Taylor, Jacksonville
Duval.....	Dr. R. H. McGinnis, Jacksonville Dr. S. A. Richardson, Jacksonville Dr. J. E. Boyd, Jacksonville Dr. R. B. McIver, Jacksonville Dr. F. A. Copp, Jacksonville
Escambia.....	Dr. M. A. Lischkoff, Pensacola
Hillsboro.....	Dr. C. R. Marney, Tampa Dr. J. S. Helms, Tampa Dr. E. F. Ford, Tampa Dr. J. B. Wallace, Tampa
Lake.....	Dr. W. J. Calvin
Gadsden.....	Dr. W. W. Massey
Leon.....	Dr. Henry Palmer, Tallahassee
Manatee.....	Dr. S. G. Hollingsworth, Bradenton
Marion.....	Dr. Henry Dozier, Ocala Dr. J. S. McEwan, Orlando
Orange.....	Dr. G. H. Edwards, Orlando Dr. J. Scott
Palm Beach.....	Dr. L. A. Peek, West Palm Beach Dr. J. R. Cason, Delray
Pinellas.....	Dr. C. A. Williams, St. Petersburg Dr. R. D. Murphy
Polk.....	Dr. O. O. Feaster Dr. Henry Watson Dr. R. H. Mooty Dr. R. L. Cline
Sarasota.....	Dr. Jos. Halton, Sarasota
St. Johns.....	Dr. A. C. Walkup
Bay, Taylor, St. Lucie, and Walton Counties	not represented

Meeting called to order by Dr. Vinson, Chairman.

Motion by Dr. Henson that the House of Delegates sit three additional men from Duval County and one additional from Polk County.

Motion seconded and carried.

Motion for the appointment of committees to draw up resolutions on the death of five former members of the association. Carried.

The following committees were appointed:

Dr. Taylor	{	for Dr. J. V. Freeman
Dr. McGinnis		
Dr. Cason	{	for Dr. W. W. MacDonell
Dr. Milam		
Dr. Arms	{	for Dr. A. J. Smith, and Dr. D. B. Neely
Dr. Limbaugh		
Dr. Williams	{	for Dr. O. B. Lewis
Dr. Peabody		
Dr. Feaster	{	
Appointed but not named		

Report of Executive Committee, Dr. Helms, Chairman.

Motion by Dr. Anderson to accept Dr. Helm's report. Motion seconded and carried.

Motion by Dr. Henson that the By-laws providing for annual dues, which now reads, "Shall be \$5.00 per annum," be amended to read, "Shall be \$10.00 per annum."

In accordance with the provisions of the By-laws the proposed amendment was laid upon the table until the following day.

Announcement by Dr. Henson, Secretary, that certain amendments to the By-laws which had been presented at the 1924 meeting were to be voted at this meeting. The proposed amendments were then read by the Secretary.

Motion to amend Article 6 of Section 2 as read by the Secretary. Seconded and carried.

Motion to amend Article 7, Section 1, as read. Seconded and carried.

Motion to amend Article 7, Section 2, as read. Seconded and carried.

Motion to amend Article 7(a) as read. Seconded and carried.

Motion to adjourn.

The Scientific Session was called to order by Dr. H. Mason Smith at 9 a. m., and the following papers were read and discussed:

"The Diagnosis of Intracranial Lesions," Ralph N. Greene, Jacksonville.

"Hemorrhage in the Newborn," N. L. Spengler, Tampa.

"The Needs and Advantages of a Mental Hygiene Movement," G. H. Benton, Miami.

"Personal Observations in Gas Bacillus Infections," Frederick Bowen and Harold D. Van Schaick, Jacksonville.

"The Role of Calcium," Carlos F. Arroyo, Tampa.

"Prostatectomy Under Regional Anesthesia," R. B. McIver, Jacksonville.

GENERAL MEETING OF THE ASSOCIATION

The General meeting of the Florida Medical Association was held at 12:00 o'clock noon, Wednesday, May 20, 1925, St. Petersburg, Florida.

Meeting called to order by Dr. John C. Vinson, President.

Dr. Joseph Y. Porter announced the completion of his compiled history of the association,

which he had been requested to write, and asked that this paper be accepted by the association for publication in the JOURNAL.

Motion by Dr. James D. Love that Dr. Porter's paper be read by title and that it be accepted for publication in the JOURNAL and disposed of otherwise as Dr. Porter sees fit; also that the thanks of this association be accorded Dr. Porter for this arduous work which is to be enjoyed by all.

Motion seconded and carried.

Motion for a rising vote of unanimous appreciation to Dr. Porter for his paper and his presentation thereof for publication in the JOURNAL. Carried. Rising vote of thanks.

Annual election of officers:

Dr. J. S. McEwan of Orlando nominated for President by Dr. Ralph N. Greene of Jacksonville. Seconded by Dr. H. Mason Smith.

Motion to close nominations and instruct Secretary to cast ballot for Dr. McEwan. Seconded and carried.

Dr. Ralph N. Greene and Dr. H. Mason Smith appointed by the President to escort Dr. McEwan to the Chair.

Dr. McEwan: "Gentlemen, if I had the oratorical ability of my friend, Ralph, I would thank you in beautiful terms. All that I can say is: I appreciate this honor, the greatest honor that can be bestowed upon a professional man in the state of Florida. I hope that you men will help me. We wish to organize the medical profession in the state. It means that we must get every eligible man in the State in the association and if we can do that we can do anything. Owing to the work of our friend, Dr. Rowlett, and his committee, the Legislature has passed no obnoxious legislation this year and there will probably be nothing done. I want you men when called upon to respond, and if you are having trouble where you live, in the organization or the profession, call on the officers and we will see, and I will see personally, that you get a man down there to help you. Sometimes a stranger in the community can do a lot toward straightening things out."

"I thank you, gentlemen."

The Past Presidents' Emblem was presented to Dr. Vinson by Dr. Ralph N. Greene of Jacksonville.

Dr. Carl Williams nominated for First Vice-President by Dr. Holloway of Jacksonville. Seconded.

Dr. H. Mason Smith nominated for First Vice-President by Dr. Boyd of Jacksonville. Seconded.

Dr. L. S. Oppenheimer nominated for First Vice-President by Dr. Ross of Jacksonville. Seconded.

Dr. J. A. Simmons nominated for First Vice-President by Dr. John E. Boyd.

Motion to close nominations. Carried.

The President then called for vote by written ballot.

Motion by Dr. Boyd of Jacksonville, that only the two highest men, Drs. Williams and Smith, be voted upon. Seconded. Dr. John S. Helms raised a point of order that the motion was not in order. The Chair sustained the point of order.

Dr. L. S. Oppenheimer and Dr. J. A. Simmons requested that their names be withdrawn from the ballot and the Chair so ordered.

Vote by written ballot—Dr. Carl Williams and Dr. H. Mason Smith. Dr. H. Mason Smith, 65; Dr. Carl Williams, 56. Dr. H. Mason Smith, having received the majority of votes cast, was declared elected First Vice-President.

Dr. Carl Williams nominated Second Vice-President. Seconded and carried.

Dr. Simmons nominated for Third Vice-President. Seconded and carried.

Dr. Shaler Richardson of Jacksonville nominated by Dr. H. Mason Smith to succeed Dr. Graham E. Henson as Secretary-Treasurer and Editor of the JOURNAL.

Motion seconded by Dr. Graham E. Henson.

Motion to close nominations and instruct Secretary to cast ballot for Dr. Richardson. Seconded and carried.

Motion by Dr. L. M. Anderson, Lake City, that the Association give a rising vote of thanks to Dr. Henson for his services during the past eleven years as Secretary-Treasurer and Editor of the JOURNAL.

Rising vote of thanks accorded Dr. Henson.

Motion by Dr. Henson that the President appoint fourteen Councillors for the ensuing year. Seconded by Dr. Taylor. Carried.

Motion by Dr. Love that a set of resolutions be drawn to the Pinellas County Medical Society for their courtesies to the Association during this meeting.

Dr. Vinson and Dr. Love appointed to draw up such resolutions.

Motion to adjourn.

MEETING OF HOUSE OF DELEGATES

Meeting of the House of Delegates, 12:00 o'clock noon, May 20, 1925, St. Petersburg, Florida.

Motion to amend the By-laws, and thereby raise the annual dues from \$5.00 to \$10.00 was seconded and carried.

Dr. J. A. Simmons of Miami extended an invitation from the Dade County Medical Society for the association to hold the 1926 meeting in Miami.

Invitation from the Palm Beach Society by Dr. L. A. Peek, requesting the 1926 meeting at West Palm Beach.

Invitation from the Alachua County Society by Dr. J. Mary Dell, requesting the 1926 meeting at Gainesville. Seconded by Dr. H. Marshall Taylor, of Jacksonville.

Voted by ballot. Invitation to Gainesville accepted.

Motion made to extend an invitation from the Florida Medical Association to the Southern Medical Association, to meet in Miami, Florida. Seconded and carried.

Dr. Helms of Tampa submitted the plan of his committee for revising of the Constitution and By-laws.

Motion to adjourn.

The Scientific Session was called to order by Dr. John A. Simmons at 2 p. m., and the following papers were read and discussed:

"Modern Methods of Diagnosis and Treatment of Ureteral Calculus," E. S. Gilmer, Tampa.

"Stricture of the Esophagus Due to Lye Burns," Joseph Halton, Sarasota.

"Roentgen Diagnosis and Bronchoscopic Treatment of Lung Abscess," W. J. Knauer, W. McL. Shaw, Jacksonville.

"Focal Infection as Related to Systemic Disease," Albert T. Summers, Miami.

"The Laboratory as a Practical Aid to Diagnosis," Walter C. Jones, Jr., Miami.

Upon motion, duly seconded, the Scientific Assembly adjourned *sine die*.

PROCEEDINGS OF THE SIXTH ANNUAL MEETING OF THE FLORIDA RAIL- WAY SURGEONS' ASSOCIATION

Held at St. Petersburg May 18, 1925

The Sixth Annual meeting of the Florida Railway Surgeons' Association was called to order at the Princess Martha Hotel, St. Petersburg, Flor-

ida, May 18, 1925, by Dr. John D. Peabody, Chairman of Committee on Arrangements. After the invocation by the Rev. W. W. Williams, the Honorable R. N. Pearce, Mayor of St. Petersburg, delivered an address of welcome. The response was made by Dr. L. S. Oppenheimer of Tampa. Dr. H. E. Palmer of Tallahassee, President of the Association, then delivered his address.

PRESIDENT'S ADDRESS

To the Association of Florida Railway Surgeons.

Mr. Chairman and Members of the Association of Florida Railway Surgeons: I desire again to express my thanks and appreciation for the honor done me at our meeting in Orlando last May when you elected me President of this Association.

It is a great pleasure to preside over this meeting in the progressive city of St. Petersburg, to see its wonderful growth and to partake of its generous hospitality. All Florida is proud of the achievements of the Sunshine City. Its success and progressive spirit is an inspiration to other section of the state.

We meet in annual convention to renew old friendships and to make new ones, to listen to instructive papers, swap ideas and exchange experiences. We also meet to solve the problems coming up for the good of organized medicine; to direct, strengthen and build up our association.

Let us all realize our interdependence and the necessity of thorough organization for the mutual uplift and benefit of our profession.

I wish to call your attention to certain facts and figures relative to the physicians and surgeons employed by the various railway systems in Florida. The systems of railways in the state and the number of medical men employed by them are as follows:

Live Oak, Perry & Gulf Railway employs...	3
Georgia, Florida & Alabama employs.....	5
Georgia Southern employs	7
Louisville & Nashville employs.....	15
Atlantic Coast Line employs.....	49
Seaboard Air Line employs.....	51
Florida East Coast Railway employs.....	69

This makes a grand total of 199 physicians and surgeons employed by these various railway systems.

Let us go a little further and ascertain how many of these medical men are active members of our association. For convenience of classifi-

cation we will divide them into active members, non-members and lapsed members.

	Active Members.	Non- Members.	Lapsed Members.
L. O. P. & G. Ry.....	1	2	0
G. F. & A. Ry.....	0	5	0
Ga. Southern Ry.....	3	4	0
A. C. L. Ry.....	31	18	2
S. A. L. Ry.....	26	23	3
F. E. C. Ry.....	57	11	9
	—	—	—
	114	71	14

This gives us 114 active members, 71 non-members and 14 lapsed members. Thus, you see that out of a total of 199 surgeons eligible to membership in the association only 114 have availed themselves of this privilege and honor. Nearly fifty per cent of the surgeons are either indifferent to or do not appreciate membership in the association.

We have depended too much upon our faithful secretary to keep the association running. He cannot do it all. He needs your sympathetic encouragement and help. It certainly speaks well for his devotion and industry that the association has progressed thus far. I am willing to give him full credit for keeping it alive and going.

I do not believe that the importance of organization and cooperation has been impressed upon these non-members. It should be the duty of every member to get in touch with these men and use every effort to prevail upon them to join the association. Just think of the splendid material and potential power for good among these 85 men going to waste, as it were, because of non-activity in our association. We need them and they need us to help solve the daily problems that confront us in our professional activities. Let us go after and get them. I feel that it is only necessary to call your attention to this undesirable situation to have it corrected by our next meeting.

The minutes of the previous meeting were read and approved, as were the reports of the Secretary-Treasurer.

The Scientific Program.

"Abrasions," by Dr. T. M. Rivers of Kissimmee. Discussed by L. M. Anderson, Lake City, Mary Freeman of Perrine, and Fred Albee of New York, and closed by essayist.

"Endarteritis Obliterans," by Dr. H. E. Palmer of Tallahassee. Discussed by Drs. F. J. Waas of Jacksonville; John W. Alsobrook of Plant City; Fred H. Albee of New York and John E. Boyd of Jacksonville, and closed by essayist.

"Rehabilitation Surgery," an illustrated lecture by Dr. Fred H. Albee of New York, the guest of honor.

Business Session.

Sixteen new members elected to the association. Election of officers for ensuing year resulted as follows:

President, Dr. Joseph Halton of Sarasota.

Vice-President, Dr. John D. Peabody of St. Petersburg.

Secretary-Treasurer, Dr. E. W. Warren of Palatka, reelected for four years.

Appointive Committees:

Scientific program, Drs. G. H. Edwards, J. W. Alsobrook, J. M. Dell.

Arrangements, Drs. G. C. Tillman, together with all other local surgeons of Gainesville.

A resume of the membership of the local surgeons of the three great railroad systems of the state show that out of a staff of 69 local surgeons of the Florida East Coast Railway 57 are active in the association; the Atlantic Coast Line Railroad, 31 active members out of a staff of 51; while the Seaboard Air Line out of a staff of 52 has 26 active members.

A drive to get every local surgeon in the state into the association during the coming year was undertaken.

Dr. Joseph W. Burke, chief surgeon of the Seaboard Air Line Railway, was present and gave a delightful talk and gave the association the encouraging hope that in the reasonably near future all the railroads in the Southeast would in all probability give interchangeable transportation to local surgeons and their families.

REGISTRATION

The following members and guests registered during the Fifty-second Annual Meeting of the Florida Medical Association held at St. Petersburg, May 19-20:

John C. Vinson	Tampa	Brewster
Graham E. Henson	Jacksonville	Tallahassee
A. S. Hawkins	Clermont	Jacksonville
H. Mason Smith	Tampa	Jacksonville
Wm. J. Knauer	Jacksonville	Miami
Shaler Richardson	Jacksonville	Jacksonville
E. T. Craney	Orlando	Brooksville
W. T. Lanier	Miami	Jacksonville
W. H. Spiers	Orlando	Jacksonville
Wm. E. Ross	Jacksonville	Miami
H. M. Taylor	Jacksonville	Jacksonville
W. S. Nichols	State Board of Health	Orlando
C. H. Kirkpatrick	Arcadia	Jacksonville
Robt. B. McIver	Jacksonville	Jacksonville
Wm. W. Kirk	Jacksonville	Jacksonville
Julian Gammon	Jacksonville	Jacksonville
Louie Limbaugh	Jacksonville	Miami
P. D. Biddle		
E. M. Brevard		
F. A. Brink		
J. L. Kirby-Smith		
R. O. Lyell		
B. L. Arms		
J. E. Maines		
W. S. Hancock and wife		
T. Z. Cason and wife		
Wm. McL. Shaw		
G. M. Lochner		
Haynes Brinson		
Stanley Erwin		
H. P. Thomson		
F. Richards		
Clarence D. Rollins		
William J. Calvin		
T. H. Green		
Walter E. Jones		
Jas. D. Love		
W. W. Farnell		
Gilbert H. Hodgson		
Donald T. Babcock		
J. Brown Farror		
Alvin L. Mills		
J. H. Mills		
W. J. Buck		
Ralph L. Green		
H. L. Putnam		
R. H. McGinnis		
O. O. Feaster		
Gerry R. Holden		
J. Harry Walters		
K. M. Davis		
A. H. Freeman		
H. E. Winchester		
H. F. Watt		
D. W. Harris		
J. M. Dell		
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H. S. Geiger		
C. J. Marshall		
S. E. Wilhoit		
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Homer L. Pearson		
Geo. R. Creekmore		
R. E. Wilhoit		
L. Lambdin		
W. J. Holton		
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G. S. Osincup		
P. M. Lewis		
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R. M. Harris		
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D. H. Simmons		
G. Fraser Wilson		

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A. C. Walkup	St. Augustine	G. C. Kingsburg	Largo
R. L. Cline	Lakeland	Frederick A. Grossman	Vero
M. D. Thomas and wife	Miami	T. M. Rivers	Kissimmee
L. B. Dickson	Clearwater	John E. Boyd	Jacksonville
A. D. Draper	Tampa	M. A. Lischkoff	Pensacola
George E. W. Hardey	Tampa	Carl A. Williams	St. Petersburg
H. M. Beardall	Orlando	Jack Halton	Sarasota
A. McJobson	Tampa	Joseph M. Burke	Petersburg, Virginia
Franklyn Thorpe	Tampa	David Rose	
R. E. Glass	Tampa	L. A. Peek	West Palm Beach
W. E. Sinclair	Orlando	J. H. Pittman	West Palm Beach
J. T. Denton	Sanford	H. D. Clark	Fort Pierce
J. A. Ford	Orlando	H. W. Wade	St. Petersburg
J. R. Chappell	Orlando	F. A. Copp	Jacksonville
J. G. DuPuis	Lemon City	Mary Freeman	Perrine
E. L. Beggs	Starke	L. M. Anderson	Lake City
W. D. Brinson	Baldwin	Joseph Halton	Sarasota
T. F. Jackson	Dade City	F. L. Fort	Jacksonville
H. F. Hope	Atlanta, Ga.	Geo. O. Davis	Madison
A. J. English	Palmetto	Edgar Peters	Miami
Douglas D. Martin	Tampa	W. H. Mudge	Port Tampa City
W. A. Myers	Winter Park	Wm. M. Davis	St. Petersburg
A. T. Hudson	St. Petersburg	E. W. Warren	Palatka
J. Frank Crawford	St. Petersburg	S. C. Wood	Leesburg
Wm. H. Dodds	St. Cloud	John D. Peabody	St. Petersburg
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M. A. Wickle	Clearwater	B. Brantley	Grandin
Orlando S. Clyatt	Lakeland	L. S. Oppenheimer	Tampa
L. J. Efird	Tampa	G. C. Tillman	Gainesville
Walter A. Weed	Birmingham, Ala.	J. W. Alsobrook	Plant City
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C. R. Marney	Tampa	F. J. Waas	Jacksonville
LeRoy A. Wylie	St. Petersburg	Geo. M. Mitchell	Jacksonville
Herman Watson	Lakeland	H. Gates	Bradenton
H. K. Murphy	Mulberry	T. M. McDuffie	Ft. Lauderdale
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G. E. Whitford	Ozona	G. H. Benton	Jacksonville
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Dr. John S. McEwan, of Orlando, President Florida Medical Association.

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OUR PRESIDENT.

Dr. John S. McEwan, of Orlando, was unanimously elected President of the Florida Medical Association at the Fifty-second Annual Meeting held in St. Petersburg, May 19-20. This laurel was bestowed upon one who has been ever active in all the phases of organized medicine.

Dr. McEwan received his preliminary education at the University of the City of New York, later receiving his medical degree from Northwestern University. From 1905-1906, he served as resident physician at the New York Hospital. In 1906 he came to Florida to locate at Orlando. During the World War, Dr. McEwan served as

Chef de Medicin with the American Ambulance Hospital No. 2 at Juilly, France.

His interest in association affairs has always been keen and during the past year he served as First Vice-President. He is a member of the Southern Medical Association, American Medical Association and Southern Surgical Association.

Under his loyal guidance the Association is assured a most progressive administration.

THE ST. PETERSBURG MEETING

The St. Petersburg meeting was replete with profit and pleasure to our members. Those taking part in the Scientific Program are to be congratulated on their excellent presentations. The papers were most interesting and of immeasurable practical value. The publication of preliminary abstracts has certainly aided materially in the value of the discussions. The wisdom of reducing the number of papers read and limiting the time for the reading and discussion of same was obvious, for during each session the allotted papers were read and discussed without time conflict.

The entertainment features arranged by the Pinellas County Medical Society were enjoyed by our members and guests. The banquet was the outstanding social event and was a fitting compliment to the excellent attendance. The members of the Pinellas County Medical Society are to be congratulated on their hospitality.

THE SUCCESS OF THE JOURNAL

Great enthusiasm was kindled at the St. Petersburg meeting over the possibilities of our association and JOURNAL during the coming year. The newly organized editorial staff assumed their duties with the preparation of this issue and will endeavor to make the publication one that is worthy of its membership. However, it is only by manifest effort and cooperation on the part of our entire membership that we can succeed. A geographical distribution of associate editors has been made in order that each section of the state might share alike in the work.

The quantity and quality of original articles appearing in the JOURNAL will determine whether or not it is worthy of our efforts. Excellent papers are read before the county societies throughout the year and these should appear in the JOURNAL. The Secretaries of the societies are urged to forward same to the Editor.

The organized hospital staffs are likewise requested to forward all papers and case reports presented at their meetings.

The curtailment of the number of papers read at our annual meeting has necessarily reduced the number of original articles available for publication in the JOURNAL. For this reason it is now imperative that the county societies and hospital staffs supply the original articles for our pages.

A state and county news department has been created and news items should be forwarded promptly in order that they may be published while current.

Your hearty cooperation is asked for. Suggestions will be welcomed. Let us strive for the production of a JOURNAL worthy of our association.

THE ORTHOPEDIC DEPARTMENT OF THE FLORIDA STATE BOARD OF HEALTH

It is not generally known that the State Board of Health has reopened the Orthopedic Department, which was closed in June of 1922 and until July of 1924. There are reasons to believe that the number of crippled children in the state is much greater than generally supposed, and the majority of these cases are in destitute circumstances, and unable to secure proper treatment. Only a few of the larger cities have any facilities at all for caring for the crippled child; while those living in the smaller towns and rural districts have had almost no chance at all to secure proper treatment.

It was for this class of indigent cripples that the department was reorganized. Any child, white or black, who has a correctible deformity and is unable to pay for private treatment is eligible. Parents are asked to contribute whatever they are able to do towards the actual cost of such treatment. The state does not pay transportation to and from Jacksonville, where the work is being done, at St. Luke's and Brewster Hospitals. About seventy patients were treated during the past year.

The facilities are limited, as yet, and often it is necessary to wait two or three months before a hospital bed is available.

Those desiring further information should write to the Orthopedic Department, State Board of Health, Jacksonville, Florida.

CONCERNING ENCEPHALITIS*

BEVERLEY R. TUCKER, M.D.,

Professor of Nervous and Mental Diseases, Medical College of Virginia, Richmond, Virginia

In 1890 and 1891, following the great epidemic of la grippe, Trautjen, in Germany, Hammer-slough and Mauthner, in Austria, and Gray, Pritchard and Shulz, in this country, described cases of noma or encephalitis. Little or nothing was again heard of the condition until March 8, 1919, when cases were reported by the health authorities of Evanston, Illinois, and Pothier published an article on lethargic encephalitis in the *Journal of the American Medical Association*. This was followed by an editorial and special article, in the same journal, on March 15th, and an article in the April 5th issue by Basso, entitled Epidemic Encephalitis. In the May 17th issue, 1919, the writer reported eleven cases, with autopsies on two of them, under the title of Epidemic Encephalitis Lethargica. In this report the opinion was expressed that the condition was either a manifestation, or a recrudescence, or recurrence of influenza, or, in certain cases, the expression of influenza *per se*. Time has produced no evidence sufficient to modify this opinion. It was also stated that since the height of the influenza epidemic in 1918 there had been observed, all over the country, numerous cases of influenza which had as sequelæ vertigo, depression of spirits or mania and one or more cranial nerve affections, and the opinion was expressed that these cases were due to encephalitis of more or less severity. To this statement we are still inclined to hold.

Further observations were made that epidemic encephalitis lethargica seemed to be due to congestion of the pia and the encephalon, chiefly at the base of the brain, and to be accompanied by a slight inflammatory exudate affecting various cranial nerve roots and causing, as a rule, increased intracranial pressure with increased globulin content and increased cell count in the fluid. It was stated that examination of the blood presented an almost constant leukocytosis and commonly an increase in the urea content. It was further stated that we appeared to be dealing more with a syndrome than with a new disease, and that this syndrome was chiefly manifested by moderate transient elevation of temperature and

*Read, by invitation, before the Fifty-second Annual Meeting of the Florida Medical Association, held at St. Petersburg, May 19-20.

frequently by headache, vertigo, vomiting, conjunctivitis, diplopia, choked disc, various cranial nerve palsies, muscular rigidity, changes in reflexes, increased cerebrospinal fluid pressure with increased cell count and globulin content, increased blood urea, and last, but not least, somnolence, from which the patients may be aroused for food and medicine, but in which they usually lie without change of position or expression, and had incontinence of urine and feces. The opinion was expressed that the somnolence was chiefly due to pressure and inflammation of the pituitary gland.

Some of these statements, since our knowledge of the condition has increased, need modification in that we find the cerebrospinal fluid pressure increased in about fifty per cent of the cases and increased cell count in one-third of the cases; the globulin increase is practically constant; leucocytosis is chiefly confined to the acute cases; the chronic form of the condition and its sequelæ have been further studied and classified and we have found that somnolence, not to be confused with lethargy, is comparatively rare. What we at first took for somnolence we find is frequently due to an immobile expression from double facial nerve weakness and double ptosis, the patients being only apparently asleep and may even be suffering from insomnia. We find that many of the cases do not have incontinence. Neither do we now believe that the pituitary congestion, found at autopsy in some of these cases, has anything to do with somnolence.

Since 1919 medical literature has been flooded with articles dealing with encephalitis, but nothing positive has been brought forth in regard to its specific etiology. Lowe and Strauss have reported a filtrable virous in the cerebrospinal fluid and nasopharyngeal washings in some cases and these findings have been partly confirmed. Barker¹ states that the influenza bacillus is absent from the cerebrospinal fluid and that the infectious agent of the grippe group can give rise to metastatic encephalitis, but believes the whole matter is unsettled. Alexander² isolated the influenza bacillus of Pfeiffer from the throat and nose of fifteen out of twenty encephalitis cases examined. The organism of influenza has not been identified in the brain. Description of the symptoms in the acute stage have been somewhat

elaborated, but nothing of great additional importance has been observed. But little has been added to the early autopsy reports. However, the cerebrospinal fluid findings have been standardized. In the study of the fluid from primary lumbar punctures in forty-five cases the writer found the globulin content increased in forty-two, pressure increase in twenty-three and moderate cell increase in thirteen cases. The advances which have been made consist, chiefly, in the observance and classification of various physical sequelæ in both acute and chronic cases, in more careful and clarified differential diagnosis, in a better understanding of mental and conduct disorders accompanying or following encephalitis and in the treatment of both the acute and chronic forms of the condition. It is with the advances in these four fields that we shall largely concern ourselves in the present paper.

Complications and Sequelæ

Acute cases of encephalitis may be complicated with influenzal pneumonia. Several of our cases died of this complication. In some cases, acute increased intracranial pressure, with or without dilated ventricles and with or without choked discs, may occur. Hemiplegia or other manifestations of cerebral hemorrhage may occur in the course of the disease. Cerebral thrombosis may occasionally take place. Polynueritis is not uncommon. One of our cases was complicated by a general vascular infection of streptococcus veridans. Meningitis may complicate the condition and in fact many cases deserve the diagnosis of meningoencephalitis. Various states of delirium and confusional mental disturbance are seen, at times, in acute cases.

In chronic cases several forms of involvement of the corpus striata and lenticular nuclei occur. These more or less resemble Parkinson's disease and the Wilsonian syndrome. Unlike Parkinson's disease, the tremor is not usually of the flexor, pill-rolling type, but is either constant, intention, or a mixed flexor and intention tremor. Also, unlike Parkinson's disease, the motor branch of the trigeminal nerve frequently shows much greater involvement and it is not uncommon for chewing to be extremely difficult. One of our cases would take as long as two hours to masticate a light meal. In these cases saliva drolls and the lower jaw sags. Unlike the Wilsonian syndrome the liver is rarely enlarged. A choreiform type of encephalitis has also been observed.

1. Archives of Neurology and Psychiatry, August, 1921, vol. 6, No. 2, p. 173.

2. Archives of Neurology and Psychiatry, July, 1921, vol. 6, No. 1, p. 44.

Differential Diagnosis

In acute cases of lethargic encephalitis a differential diagnosis must be made from acute infective and toxic conditions in which there is malaise, lethargy and obscuration of consciousness. This may be done by observation of temperature curves, the character and rate of the pulse, analysis of the clinical picture and various laboratory tests, for instance the Widal reaction, blood count, Wassermann test, blood culture, urine and spinal fluid examinations. Hence the resemblance, in certain cases, to typhoid, pyelitis, acute cerebrospinal lues, pneumonia and meningitis should be borne in mind.

In chronic cases, as already mentioned, a differential diagnosis of encephalitis with Parkinson's syndrome must be made from true paralysis agitans. Many cases resemble, in symptomatology, cerebral abscess, but the manifestations of encephalitis are more diffuse and hence less focal than abscess, and a ventricular puncture with air injection and X-ray of the ventricles is of value in brain abscess or tumor determination, but not in encephalitis. Many cases of encephalitis, when the condition is more pronounced in some area or another of the brain, have been operated upon for brain abscess or brain tumor. One must also bear in mind cerebral injury, hydrocephalus, bulbar palsy, paresis and other forms of cerebrospinal lues, pansinusitis, cerebral poliomyelitis, cerebral aneurism and hemorrhagic pachymeningitis interna. Heine-Medin disease, producing poliomyelitis, polioencephalitis, cerebritis and multiple neuritis has been mentioned in differential diagnosis, but clinically it is not particularly similar to encephalitis.

Sato and Yoshimatan³ report a peroxidase test on myeloid leucocytes, which is negative in acute encephalitis but positive in all other diseases. The test is complicated and in acute typical cases the diagnosis may be clinically made.

Mental and Conduct Disturbance.

Mental disturbance may occur in both the acute and chronic phases of lethargic encephalitis. In fact lethargy and malaise in themselves may be considered mental disorders. Clouding of consciousness may, at times, deepen to true unconsciousness. Delirious and confusional states may be observed in the acute cases.

Emotionality, at times, occurs with tears pour-

ing from lids half closed with ptosis and trickling over an expressionless face. Delusions and hallucinations during the acute stage are rare.

In chronic cases many and varied phases of psychotic disturbance occur. It is conceivable that a localized encephalitis of the prefrontal areas may occur, especially as many mental cases do not manifest the symptoms of generalized encephalitis. Psychoses may follow influenza in whom there are no signs of encephalitis, or in cases in whom encephalitic symptoms have been present and disappeared, or in cases in whom there is residual evidence of encephalitis. These psychoses may exhibit mania, melancholia, delusional or confused states or signs of dementia. The milder states of psychoneurosis, psychomotor retardation, agitation, irritability and emotional instability are of frequent occurrence. These various psychotic states may be transient or permanent.

Probably the most interesting of the sequelæ of encephalitis are disorders of conduct. These run to no particular syndrome. Loss of the sense of values may occur, which is marked by reckless expenditures, carelessness in accounts, check flashing, forgery and theft. Persecutory, accusatory, hypochondriacal and psychoasthenic ideas may develop which may lead to conduct irregularities of almost any variety. Individuals may undergo a change of personality and the mental processes may be either accelerated or retarded. One of our cases, a boy of ten, had influenza followed by encephalitis from which he apparently recovered. He returned to school and from having been a rather dull and backward scholar became so bright that he led his classes. He began to commit petty thefts and a few months later stole a horse and buggy which he drove to a town eight miles distant and sold for ten dollars. This money he immediately squandered. The boy showed mental excitability, lessened reason and judgment and lack of emotionality. It was considered that he probably had prefrontal adhesions, but two eminent brain surgeons refused to do an exploratory operation and he is now in a state reformatory.

It may be justifiable, therefore, in cases who previous to encephalitis manifested no marked conduct irregularities but who after encephalitis exhibited changes in conduct and personality, to assume that these changes were brought about by cerebral damage due to encephalitis.

3. Sato and Yoshimatan, March, 1925. Amer. Jour. of Diseases of Children.

The Treatment of Encephalitis

Symptomatic medication is of some benefit in treating the condition. It should be remembered that many of the cases with ptosis and other cranial nerve palsies are usually only apparently somnolent and may require hypnotics for insomnia. In the *paralysis agitans* type hyoscine in small repeated doses, or hyoscyamus may be of some benefit. Lumbar puncture, repeated upon the judgment of the physician, for the relief of increased intracranial pressure is valuable and may tend to prevent permanent brain damage. Hydrotherapy and massage are useful. Mercurochrome solution hypodermically has been used with reported benefit in a few cases. The most effective treatment, however, is the administration of intraspinal autogenous serum.

During 1917, R. D. Moffett suggested intraspinal autoserum treatment in chorea. Febdel, in Germany, in 1920, treated lethargic encephalitis by intraspinal injection of autogenous serum and reported improvement from the treatment. Brill, of Portland, Oregon, in 1920, reported five cases treated with autogenous serum intraspinally with marked improvement in four cases. The writer⁴ began, independently, in 1919, to treat certain cases of encephalitis by the intraspinal injection of autogenous serum, and in 1924 reported nineteen cases so treated.

Method of Preparing Autogenous Serum for Intraspinal Use

Forty c.c. of blood is withdrawn and placed in either two or four sterile centrifuge tubes. This is allowed to clot and then centrifuged until clear serum is obtained. The serum is then pipetted into another sterile centrifuge tube and re-centrifuged at a high rate of speed to get rid of the remaining red cells. This serum is then placed in a sterile test tube and inactivated in a water bath at 56 degrees C. for forty-five minutes to one hour. From 6 to 12 c.c. is injected intraspinally.

It is well to use a sensitizing dose of 1 c.c. intradermally before giving the intraspinal injection. When this is done, the blood should be taken twice in order that the serum for the treatment will be fresh.

Method of Injection

A lumbar puncture is made as usual, 20 to 40 c.c. of cerebrospinal fluid is withdrawn, and a

20 c.c. syringe with a rubber adapter is connected to the lumbar puncture needle. Several cubic centimeters of spinal fluid are allowed to run in the syringe to displace the air and act as a dilutent to the serum, which is now added. The plunger of the syringe is inserted and the fluid injected under gentle pressure.

Of the nineteen cases reported two uncomplicated acute cases promptly recovered. One acute case, complicated with pregnancy and acute exophthalmic goitre, died in several weeks, although the encephalitis symptoms improved after treatment. Another acute case, complicated with pneumonia, died in three days of pneumonia and this is the only case in which improvement did not follow treatment. Of the others, three were uncomplicated chronic cases, nine cases had chronic encephalitis complicated with Parkinson's syndrome, and improvement occurred in all of these cases. One other case of chronic encephalitis was complicated with spinal myelitis and another with hysteria and feeble-mindedness, and still another with chronic chorea; all of these also improved.

In two cases severe, apparently anaphylactic, reactions were noted. This induced us to give intradermally 1 c.c. of the serum before attempting treatments. If the patient is susceptible, redening from an inch to two inches in diameter will be seen at the point of injection, and there may be a slight increase in temperature and pulse rate. It is wise to give the intradermal test as a routine. The intraspinal injections may be given as frequent as a few days apart, but it may be best to give them a week apart. We have given as many as seven treatments to a chronic case.

To summarize, let me say that when we see a case of influenza there is one chance in several thousand that the case will develop some form of encephalitis, either during the attack or as a sequel. In some instances it may be that encephalitis is an evidence of influenza per se, i. e., brain influenza, just as one speaks of gastrointestinal influenza.

When encephalitis exists there is an acute stage usually with slight febrile reaction, mild leucocytosis, headache and malaise. The acute case may recover satisfactorily, may go into a chronic phase or may die. About twenty per cent of the acute cases have choked discs. Various reflex changes and cranial nerve palsies occur. Some form of tremor is almost a constant finding. Incontinence is rare. Somnolence

4. Journal Nervous and Mental Diseases, October, 1924, vol. 60, No. 4, p. 347.

is rare and is usually only apparent, because of ptosis and facial weakness.

Chronic encephalitis may persist in the lethargic state for days or weeks or months. One of our cases was in this state for 129 days. Autopsy disclosed enormously distended ventricles. The chronic cases may have generalized encephalitis or it may become more or less localized, manifested chiefly by psychic and conduct disturbance, Parkinsonian symptoms, basilar irritative phenomena or forms of paralysis. The chronic cases may recover, remain indefinitely affected or gradually progress to death. The most satisfactory treatment in our hands is the introduction of autogenous serum intraspinally.

Anyone who thinks that the diagnosis and treatment of lethargic encephalitis, in its various phases, is a simple matter is either inexperienced or deluded. There is hardly a neurological condition presenting a greater complexity of symptomatology, or as far as the chronic stage is concerned, fewer definite therapeutic indications. It would seem that further study should be especially directed toward the discovery of the causative organism, toward prophylaxis in the better control of influenza, toward a more comprehensive and detailed classification of the neurologic and psychiatric manifestations and toward the introduction of more definite vaccine or serum therapy.

212 W. Franklin Street.

CONGENITAL CLUBFOOT

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Children have been born with clubbed feet in every race, climate and age of the earth, as far back as the history of man is known. Neither color, sex, climate nor race are apparent factors in producing this condition. Heredity does not account for it. The actual cause of clubfoot, as in many other congenital defects, is still a matter of conjecture; largely because such conditions are not recognized until after birth, when all clues as to their etiology have vanished. Therefore, prevention, or prophylaxis, is impossible today. At least in our present state of knowledge, it seems safe to conclude that we will continue indefinitely to see children born into the world with such deformities. In fact, no community of any size is free of them; for it is esti-



Case No. 1, "E. B."
Before treatment.



Case No. 1, "E. B."
After treatment.

mated that one child out of every two thousand is born with one or both feet deformed. The diagnosis presents no difficulty, as every layman is familiar with the condition. There was an age in our history of civilization when these unfortunate cripples were deliberately destroyed. But as man became more civilized, he allowed them to live and enjoy life as best they could with their deformities. In our present humanitarian age, we not only let them live but try to salvage these partial wrecks of humanity. For many centuries,



Case No. 2, "M. M."
Before treatment.



Case No. 2, "M. M."
After treatment.

however, the medical profession was almost, or totally helpless in relieving such conditions. Indeed, it was only during the past generation that the treatment for congenital clubfeet became standardized to a degree where anything like consistent results were obtained. Certain it is, too, that the treatment has not yet been perfected;



Case No. 3, "N. D."
Before treatment.



Case No. 3, "N. D."
After treatment.

but enough so to make it a crime against humanity and a slur on the profession as a whole, to allow any child so afflicted to reach maturity untreated.

The object of this paper is to summarize, briefly, the methods of treatment now being used; and to show, with the aid of a few photographs, something of the results to be expected in a given case. The author does not claim to have discovered or developed anything new concerning clubfoot, but he does hope to be of some service in helping to solve this problem which confronts us today.

In this condition, as in practically all other diseases, the earlier treatment is begun the better is the end result. In fact, treatment should begin almost at birth, and certainly during the first six months of life. When proper treatment is begun in infancy and continued long enough, feet that are normal in size, shape, and function, can be obtained. When improper or no treatment is had for the first seven or eight years, a degree of deformity requiring operative correction, and a lack of development is obtained which can never be restored to normal. However, a foot that is

stable and painless in walking and looks normal in shoes, is to be preferred by all standards to the original deformity; for it makes the individual a more useful and independent citizen by increasing his physical fitness and removing from his mind the social stigma of being a cripple.

In early infancy, daily manipulations to correct the varus and equinus and inversion of the foot, pushed to the point of endurance, is all that is necessary in many cases. Usually, however, it is advisable to maintain the correction obtained by means of adhesive plaster strapping, reapplied each week. The mother can usually be instructed how to continue such treatment at home with monthly visits to the physician's office for observation. Some cases, even in infancy, are very resistant to manual correction, and when the deformity is very severe, repeated corrective plaster casts are indicated at first. The cast should hold the foot in the maximum amount of correction and extend to the mid-thigh with the knees flexed. They should be reapplied every month, and when properly done, will not cause any particular discomfort or pressure spots. One to two weeks after applying a cast, a dorso-lateral wedge should be removed from over the instep, and any further correction obtained must be preserved by a few more turns of plaster about the foot and ankle. In this manner, it is possible to over-correct the worst kind of clubfoot in young children within a few months' time, without ever resorting to surgery. Children up to seven or eight years of age can be cured by this method, although it requires a great deal of time and patience on the part of all concerned. Whenever time and circumstances permit, all cases should be treated this way, as it lessens the amount, and facilitates the operative procedures that necessarily follow.

The social and financial status of the patient often influence the method of treatment to be instituted. There are many cases where, because of distance, or financial conditions, or lack of parental cooperation, it is impossible to see the patient frequently, over prolonged periods of time. Here quicker, but less conservative means must of necessity be used. Under such conditions, time can be saved and still results not sacrificed by resorting to ether manipulation, especially in the older cases. With the patient anesthetized, and by twisting the foot by hand, or with a Thomas wrench, or bending it over a wooden wedge, the severest kind of deformity

can often be corrected in from three to six sittings. The manipulations should not be done oftener than once a month, while plaster boots are worn in the meantime to maintain the corrected position.

In the old untreated cases, the tarsal bones have become so distorted, hypertrophied and dis-



Case No. 4, "A. J. S."
Before treatment.



Case No. 4, "A. J. S."
After treatment.

placed, that complete correction by manipulations alone cannot be secured. Here the problem is more difficult and one is obliged to resort to operative surgery to secure and maintain correction. Always, when quick and permanent results are desired, bone operations are necessary, especially so in the adolescent or adult cases.

Operative correction of clubfeet usually consists of tenotomies of contracted tendons and removal of dorsal bond wedges, together with arthrodesis of one or more of the tarsal joints. Cutting operations, while sometimes necessary, are always mutilating to a degree and, in the

younger subjects, interferes materially with growth. No attempt will be made to describe the many and varied operative procedures now in use for correcting clubfeet. Suffice it to say that nearly any foot can be made to look normal in shape, but not in size. The operation of Doctor Michael Hoke, of Atlanta, Georgia, is, in our opinion, the most logical and the most efficient one to correct and maintain the deranged architecture of clubfoot. The point I wish to make is not so much how the correction is obtained, as the fact that they can be corrected, and that the earlier in life treatment is begun the easier it is, and the nearer normal will be the results.

A word of warning, however, seems necessary here concerning the tendency towards recurrence of this deformity, for it is a common experience to see varying degrees of relapse for several years even after complete over-correction has been obtained. Observation, and whatever treatment seems necessary, should be continued for several years after the primary correction, and especially is this true in the cases treated by manipulation alone. It is during this convalescent stage that braces play their most useful role of holding the foot in its proper position. But when used alone as an active corrective agent braces are, for the most part, worse than useless, and not to be relied upon.

The following photographs, taken before and after treatment, will give the reader a clearer idea than a verbal description of what can be done with these cases. All are indigent children of this state and were treated during the past year by the Florida State Board of Health.

NOTE—A limited number of children with corrective deformities, who are not financially able to secure proper treatment and are not over sixteen years of age, can be cared for by the State Board of Health. For further information, write to the Orthopedic Department of the State Board of Health, Jacksonville, Florida.

ABSTRACT DEPARTMENT

SURGERY

Drainage of the Thoracic Duct in Peritonitis, McGuire, Louis D. *Surgery, Gynecology and Obstetrics*, vol. XL, No. 5, May 1925.

McGuire, in an effort to ascertain the benefits to be derived from drainage of the thoracic duct in general peritonitis, carried on a series of animal experiments in the division of Experimental Surgery of the Mayo Foundation. This paper is based upon his work which had in view the ascertaining experimentally: (1) Whether bacteria injected into the abdominal cavity in cases of peritonitis can be recovered from the thoracic duct; (2) Whether the fluid from the thoracic duct in these cases is toxic; and (3) Whether animals with peritonitis are benefited by lymphaticostomy.

Using dogs as the experimental animals and bacillus prodigiosus as the microorganism his experiments consisted of making a thoracic duct fistula and then attempting to recover the organisms from the fistula after a pure culture had been injected into the peritoneal cavity of normal dogs, dogs with traumatized peritoneum, and dogs with general peritonitis. These cultures were practically all negative. He then tested the toxicity of the lymph from the fistula in dogs with general peritonitis by injecting it intravenously into rabbits, and found it to be non-toxic.

The dogs with general peritonitis showed no beneficial effect from the lymphaticostomy. His conclusions were:

1. That bacillus prodigiosus, injected intraperitoneally in cases of experimentally produced peritonitis, could not be recovered from lymph from the thoracic duct.

2. That lymph from the thoracic duct in cases of peritonitis in dogs did not appear highly toxic, comparatively large amounts producing no effect when injected intravenously in rabbits.

3. That dogs with experimentally produced peritonitis were not benefited by drainage of the thoracic duct. All of them died.

4. That much experimental work must still be done before surgeons may perform with confidence lymphaticostomy in cases of peritonitis.

J. K. S.

structure of certain types of basal cell cancer, from the common small spindle or filament-like cells in closely packed masses to columnar cells arranged as acini. It is suggested that the cause of this variation is that basal cell cancer, being derived from the deep layers of the epidermis, is more closely akin to the hair follicles and sweat and sebaceous glands, which also arise from the deep layers of the epidermis, than spinous cell cancer which begins in the superficial layers. Therefore reversion to gland structure would be more likely to occur in basal cell cancer than in spinous cell cancer.

The rarity of metastases of basal cell cancer is noted. Spinous cell cancer, especially in the more malignant forms, metastasizes readily in the lymph nodes, but basal cell cancer seems to require for its progress a breaking down of the resistance of the adjacent normal tissue, probably by some substances elaborated during its growth. As basal cell cancer occupies areas that are frequently attacked by spinous cell cancer, the cells of a basal cell tumor doubtless have access to the same lymphatics and blood vessels as would the cells of a spinous cell tumor. It is reasonable to assume that these basal cells are transported, but they do not survive because the resistance in the distant tissues inhibits their growth. It seems logical, then, to transplant distant tissue to cover the raw surface left by excision of an intractable basal cell cancer with the expectation that such a flap will tend to prevent recurrence.

Ten cases of intractable basal cell cancer, treated according to the principle of transplanting distant flaps over the area left after the cancer has been excised, are reported. There was recurrence in five of these ten cases, but in no instance was the recurrence in, or in immediate proximity to, the transplanted distant flap. In all of the recurrent cases the cancer was excised and there has been no further recurrence in three cases, while in two where it was difficult to adjust the transplanted flap to the wound the cancer continued. On the contrary, in a patient in whom a distant flap was transplanted in order to cover the raw surface after excision of an extensive spinous cell cancer a recurrence appeared under the flap and quickly invaded the flap. In most basal cell cancers in early stages simple methods of excision with a knife, cautery or paste, or treatment by roentgen-ray or radium, are usually effective, but in a few instances these measures do not avail. It is in these intractable cases that

The Transplantation of Distant Skin Flaps for the Cure of Intractable Basal Cell Carcinoma, read at the meeting of the American Surgical Association, Washington, D. C., May 5, 1925, by J. Shelton Horsley, M. D., Richmond, Virginia.

The pathology of basal cell cancer is discussed. There is marked variation in the morphology and

a thorough excision, preferably with the electric cautery, and transplantation of a flap from a distance afford an opportunity for cure after other methods have failed. The principle of the operation is based upon the peculiar pathology of basal cell cancer in that it does not metastasize.

J. S. H.

DERMATOLOGY

Glucose Tolerance Reactions in Eczema, Samuel Ayres, Jr.

Ayres gives a very interesting and accurate report of experimental work on the glucose tolerance in eczema. This being another recent contribution to the subject following the work of McGlasson. This article is a valuable contribution to experimental work on the unsettled etiology of eczema. The following is the summary of the study:

1. A report is presented dealing with the glucose tolerance reactions in a series of eighty-six consecutive cases of typical eczema.

2. The tests were about equally divided between two laboratories, each using the Folin-Wu colorimetric technic. A few tests were made in two other laboratories, but the results of all four laboratories were in general agreement.

3. The average values of the entire series of cases at the fasting, half-hour, one-hour and three-hour periods were all distinctly higher than the average values at corresponding periods in a large series of clinically normal persons.

4. A normal fasting blood sugar value does not prove that a given case of eczema is not of the hyperglycemic type, since many cases showing markedly decreased tolerance reactions had perfectly normal fasting values.

5. In this series of eighty-six cases, there is no constant association of decreased sugar tolerance with any one definite clinical type of eczema.

6. The percentage of cases in the eczema group showing unusually high values was much greater than in the normal group. Thus, in the eczema group, 12.7 per cent of the eighty-six cases showed readings of 200 mg., or more of sugar per one hundred cubic centimeters of blood two hours after the test meal, as compared with 0.8 per cent of 253 clinically normal persons.

In other words, there were more than fifteen times as many decidedly abnormal reactions in the eczema series as in the normal series at the two-hour interval.

7. In not a single instance in which an abnormal reaction was present had the patient been

aware of the existence of any disturbance of his carbohydrate metabolism.

J. L. K.-S.

ROENTGENOLOGY

Oral X-Ray Diagnosis, F. F. Molt, D.D.S. Radiology, March, 1925, p. 242.

It is an accepted fact that by far the greater portion of infectious foci are found above the clavicle, these being practically all primary foci. The author divides them into four groups:

1. Sinuses.
2. Tonsils.
3. Throat and pharynx.
4. Teeth.

The X-ray is of great value in diagnosing involvement of the sinuses and teeth. With a full complement of teeth, there are present possibly thirty-two separate foci. The numerical preponderance of this type of focus, and the importance therefore of careful diagnosis is apparent.

There has been a change of attitude of the dental profession towards dead teeth. Devitalization, which has heretofore been considered an elective procedure, has now been shown to be a practice entailing the most menacing possibilities.

There are still those in the extremely conservative group of the dental profession who will not concede that a dead tooth may be a focus of infection or that teeth have any relation to anything but teeth. This attitude has thrown the burden of oral diagnosis in a great measure upon the physician. Oral diagnosis should be achieved by team work between physician and dentist, each recognizing the other's problems and striving for the good of the patient.

The radiologist is a consultant and the radiographic evidence must first be reconciled with clinical and symptomatic findings before a diagnosis can be made. The radiogram being the basic factor in oral diagnosis should be as nearly perfect as is possible to make it. Many fall short of this standard. Failure may lie in one or all of the following:

1. Lack of a sufficient number of exposures to cover comprehensively all of the teeth and alveolar structures.
 2. Improper positioning, or placing of films so that the teeth and other structures are distorted or overlapped.
 3. Over or under exposure, or improper development.
- Radiology is a comparatively recent innovation and the entrance into practice of many dentists

and physicians antitated its use. The association of teeth with systemic aberrations is likewise comparatively recent. It has been difficult to adapt these new factors to old methods of procedure, hence the impasse. The situation will be improved by more research work along dental lines, more dissemination of knowledge on this subject and actual team work between the two professions.

W. M. L. S.

OTO-LARYNGOLOGY

Direct Blood Stream Infection Through the Tonsils, M. Tanaka, M.D., and J. S. Crowe, M.D. Archives of Oto-Laryngology, vol. 1, No. 5, May, 1925.

Clinical experience has demonstrated the fact that a chronic focus of infection in the tonsils may give rise to general systemic disorders. M. Tanaka and Crowe state that the local manifestations in the eye, the optic, the auditory or other nerves; the kidney, the circulatory system or the joints, are often more prominent than are those of the focus from which they originate. The tonsils may be enlarged or may be atrophic and hidden from view by the pillars of the fauces.

There are two possible explanations of the lesions that may be located in part of the body far distant from the original focus of infection, one is the absorption of toxins from the primary lesion and the other is the passage of living bacteria from time to time into the blood stream.

The clinical evidence that many of the general systemic disturbances secondary to chronic tonsilitis are due to the localization of bacteria in the affected area is supported by the following facts:

1. The epithelium that lines the crypt in a normal tonsil has a rich capillary blood supply; the large collecting veins that surround each crypt lie just under the basement membrane.

2. A destruction of this epithelium, in whole or in part, is the most common microscopic finding in chronic tonsilitis. Often the lining epithelium is replaced with scar tissue; occasionally definite ulcers are found. In either case, large numbers of blood vessels have been thrombosed, and they afford a pathway for the entrance of bacteria into the blood stream.

H. M. T.

OBSTETRICS

Management of Occipito-Posterior Position, Scarron, Samuel J. Surg., Gyn. and Obs., vol. XL, No. 5, p. 697.

The author especially describes the indication, use and application of a new forceps invented by Kjelland, which materially aids in the rotation

of occipito-posterior positions, without injury to the child as so often seen in double forceps application.

He states that this position occurs in about 20 per cent of cases, but that fortunately the majority undergo spontaneous rotation. In those cases where the head is well flexed, the head will usually undergo spontaneous rotation, in other cases where head is not so well flexed, the frontal eminence is found opposite the acetabulum, instead of the small fontanel. It is these latter cases which will require rotation to an anterior position.

The diagnosis should be made early by abdominal examination and is not difficult unless the patient is obese or abdomen rigid. Combined with vaginal examination the diagnosis should be positive. After all, however, the course of labor is almost pathognomonic of malposition of head. Early ruptured membranes, primary inertia, slow ineffectual pains, especially referred to the back, should suggest this position of the occiput. These cases are divided into two groups for management:

1. When the head is unengaged, membranes intact, and large diameter of head above pelvic brim.
2. When head is engaged but still above ischial spines.
3. When head is low down in pelvis.

In group one most authorities advise rotation by external manipulation of shoulders. The author has never succeeded.

In second group when head is in parturient canal and occiput remains posterior after a reasonable test of labor pains he advises one of several courses:

1. Leave case to follow natural course.
2. Manual rotation of head by external manipulation of shoulders.
3. Manual rotation with forceps extraction.
4. Forceps extraction with occiput posterior.
5. Podalic version.

The author states that the best results are obtained by extension of head, rotation with Kjelland forceps and extraction. A comparison is made of the Kjelland forceps with Simpson's and Elliott's, and shows why the newly constructed forceps have the advantage in both curves over the older type forceps, and why pressure is less likely to be exerted on the baby's head. The difficulty of biparietal application of the older type forceps led Kjelland to study out this new type, and after application they cannot slip, nor

can they compress the head. The advantages of this new forceps are:

1. They are easy to apply in spite of the position of the head and sagittal suture.
2. The position of the head is not altered.
3. It is necessary to introduce only two fingers instead of the whole hand, thereby lessening chances of infection.
4. The biparietal application does not permit slipping of forceps.
5. Better rotation can be obtained because the forceps can be applied in one position.
6. The application aids the normal mechanism in terminating labor.
7. Less force is required.

J. H. W.

STATE NEWS ITEMS

Members are asked to forward news items to the Journal for publication.

Dr. H. B. McEwan, who for a number of years has been resident roentgenologist at the City Hospital, Pensacola, Fla., will assume charge of the X-ray department of St. Luke's Hospital at Jacksonville on or about July 1.

Dr. S. R. Norris has entered the ranks of married men, having been united in the bonds of holy matrimony with Miss Johnnie O'Neal on May 6, 1925. The bride and groom are at home at 2730 St. Johns avenue, Jacksonville, Fla.

Dr. J. C. Ellis, Perry, chief surgeon for the Burton-Swartz Lumber Co., at Cypress, Fla., has accomplished a result in malaria control among the employees which has resulted in an industrial economy of many thousands of dollars annually.

Dr. R. R. Killinger is about to become a Benedict, his engagement to Miss Nelle Allen having recently been announced. The marriage will occur at the First Baptist church at high noon June 30.

Dr. H. Mason Smith of Tampa, Fla., has recently completed his new and attractive home in Suburb Beautiful, Tampa, Fla.

Dr. A. E. Conter, Apalachicola, Fla., is the proud father of a newly arrived son.

Dr. B. F. Barnes of the medical staff at the State Hospital, Chattahoochee, is attempting a series of experiments in low wave radio transmission. The doctor is an electrical genius.

Dr. and Mrs. Sheldon Morris and Dr. and Mrs. Kenneth Morris will sail on a world tour on or about July 1st. The party will be absent for about one year.

Dr. R. H. Knowlton of St. Petersburg is spending some time in Europe, having sailed from Montreal last month. A telegram was received by the association during the meeting at St. Petersburg expressing his regrets in not being able to attend and wishing us a most successful meeting.

Dr. Joseph Halton of Sarasota is planning an European trip this summer.

Dr. B. L. McSwain of Arcadia is now taking post-graduate work at the New York Post-Graduate School, but will return home about June 11.

Dr. H. Marshall Taylor, of Jacksonville, read the guest's paper before the last meeting of the Tennessee State Medical Association in Nashville. The title of his paper was "Sinusitis and Swimming, Further Observations of Etiologic Factors."

At a meeting of the members of the Second District, held in Tallahassee, April 15, the Leon-Gadsden County Medical Society was abolished and a new society created, which includes all of the Second District to be known as the "Second District Medical Society." The following officers were elected: President, J. Q. Folmar, of Chattahoochee; Vice-President, J. C. Davis, of Quincy; Secretary-Treasurer, F. Clifton Moor, of Tallahassee.

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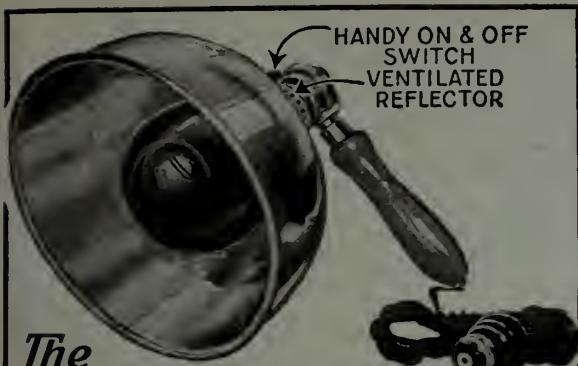
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